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PROJECT REPORT

HAZARDOUS INDUSTRIAL WASTE SURVEY
of
Selected Manufacturing Industries
in
Alameda County, California

Refuse disp. Alameda co
Indust surveys

Prepared By

Alameda County Planning Department
Under the Terms of Contract No. 74-51087
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PREFACE

In 1972 California legislators responded to the growing problem of hazardous waste management by passing Assembly Bill 598, which was signed by the governor and which is now Section 25100, et seq., Health and Safety Code. This legislation required the State Department of Health to develop a comprehensive program governing the generation, transportation, disposal, and recovery of hazardous wastes produced within the State. Specifically, the Department was to conduct research on hazardous waste practices to identify dangerous waste mixtures, methods of monitoring and handling them, and methods to recover and use valuable components in the wastes. One aspect of the State's hazardous waste program is to survey industry throughout the State.

Alameda County's participation in this investigation of hazardous waste management is described in this report. Alameda County received a grant from the State Department of Health on May 20, 1975, to undertake a survey of hazardous industrial waste generators in Alameda County as part of the Department's project, "Implementation of California's Hazardous Waste Management Program." The survey was conducted in 1976 by the Alameda County Planning Department in coordination with the State Department of Health, Vector Control Section, Berkeley and Sacramento offices.

The purpose of this report is to present a discussion of (1) the methodology used to conduct the survey, and (2) the preliminary results and conclusions. This comprehensive report, together with the completed survey forms, is the final report to the State in fulfillment of the terms of Contract Number 74-51087.


The Alameda County Planning Department gratefully acknowledges the assistance of industries generating hazardous waste in Alameda County for their assistance and cooperation in completing the survey.

TABLE OF CONTENTS

	<u>Page</u>
PREFACE	i
I. INTRODUCTION	1
County Role in Hazardous Waste Planning . .	1
Definitions	1
Summary of Survey	2
II. SCOPE OF PROJECT	3
III. SURVEY METHODS	4
Development of the Sample	4
Survey Instrument	5
Ten Percent Sample Survey	5
IV. HAZARDOUS WASTE SURVEY RESULTS	6
Conduct of Survey	6
Present Waste Quantities	9
Future Waste Quantities	12
Wastes with Similar Degrees of Hazard and/or Chemical or Physical Character- istics	12
V. DISCUSSION AND CONCLUSIONS	13

Appendices

A. LIST OF INDUSTRY GROUPS SURVEYED FOR HAZARDOUS INDUSTRIAL WASTE GENERATION IN ALAMEDA COUNTY	
B. SURVEY INSTRUMENT PACKAGE	
C. INDUSTRY RESPONSES BY SICC GROUP	
D. INDUSTRY RESPONSES BY WASTE TYPE	
E. INDUSTRY LIST	
GLOSSARY	
BIBLIOGRAPHY	



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I. INTRODUCTION

County Role in Hazardous Waste Planning

Hazardous wastes generated by manufacturing industries in Alameda County were initially studied in 1974 as part of the county-wide waste management planning effort mandated by SB-5. The literature revealed that little was known about the quality, quantity, or relative degree of hazard upon disposal of such wastes. Therefore, early in the planning effort, the Alameda County Planning Department identified a need for a complete study of hazardous waste generation by local industry.

Shortly after the passage of the Solid Waste Management Act of 1972 (SB-5), another bill was passed by the California Legislature (SB-598) that gave to the State Department of Health the jurisdictional responsibility for hazardous waste management. The coincidence of this assigned responsibility and the local planning program led to an agreement for State support of a survey of hazardous waste generating industry in Alameda County.

Definitions

For purposes of this survey, hazardous waste was defined as any "hazardous" or "extremely hazardous" waste or mixture of wastes consistent with the definitions in the State Health and Safety Code, Sections 25115 and 25117, as follows:

25115. "Extremely hazardous waste" means any hazardous waste or mixture of hazardous wastes which, if human exposure should occur, may likely result in death, disabling personal injury or illness during, or as a proximate result of, any disposal of such waste or mixture of wastes because of its quantity, concentration, or chemical characteristics.

25117. "Hazardous waste" means any waste material or mixture of wastes which is toxic, corrosive, flammable, an irritant, a strong sensitizer, which generates pressure through decomposition, heat or other means, if such a waste or mixture of wastes may cause substantial personal injury, serious illness or

harm to wildlife, during, or as a proximate result of any disposal of such wastes or mixture of wastes. The terms "toxic," "corrosive," "flammable," "irritant," and "strong sensitizer" shall be given the same meaning as in the California Hazardous Substances Act (Chapter 12 (commencing with Section 28740) of Division 21).

Summary of Survey

The initial study design was devised by the State Department of Health and included two California counties, Ventura and Alameda. Ventura County was the first test area for the survey; it was the responsibility of the Ventura Regional County Sanitation District to develop and apply the survey instrument which would be used later in Alameda County. This form was reviewed and modified by the Alameda County Planning Department, Alameda County Environmental Health Division of Alameda County Health Agency, and the State Department of Health.

After execution of a mutually agreeable contract and development of the survey instrument, the Alameda County Planning Department staff began preparing the stratified sample of industries to be surveyed in Alameda County.

Among the problems encountered in completing the survey were obtaining an accurate list of manufacturing plants and the selection of those industries which generate hazardous wastes. Both of these problems are discussed at length in subsequent sections. This is primarily a local problem which must be resolved in counties with large industrial bases. Local coordination and control aided in obtaining results.

The data shown in the tabulated results of the survey in most cases will include estimates made by the respondents rather than actual measurements of present quantities. Few respondents were able to estimate future quantities of waste. Because of these limitations, future waste quantities for Alameda County cannot be accurately projected. However, regional and sub-regional estimates could be derived from local waste data and such factors as employment, economic growth, and degree of industrialization.

The problem of hazardous waste management is acute in Alameda County. The County's industry is dependent upon two Class I sites in adjacent Contra Costa County and, to a minor degree, a site in Solano County. Should anything happen to prevent use of these sites, the problem would be severe. The objective of this study is to establish a baseline for types and quantities of waste generated locally so that hazardous wastes can either be reclaimed or properly disposed. Many other opportunities for further study exist and will be carried out by local and state governments.

II. SCOPE OF PROJECT

The Alameda County Planning Department contracted to undertake a survey of industries in Alameda County utilizing the survey questionnaire developed by the Ventura Regional County Sanitation District to determine (1) manufacturers presently generating hazardous waste, (2) the present and anticipated generation rates of the hazardous waste, (3) the probable composition and concentration of the hazardous waste, and (4) the method of hazardous waste disposal in effect. The waste generating industries were to be identified by their Standard Industrial Classification Code (SICC) number.¹ Priority was to be given to those industries determined to be generating the bulk of the hazardous and extremely hazardous waste materials.

Information derived from the surveys was to be presented in a format illustrating (1) present and future waste quantities identified by type and industry SIC number, and (2) estimated quantities of wastes having similar degrees of hazard and/or chemical or physical characteristics, i.e., acids, corrosives, etc. (The material is presented in Appendices C and D.)

The focus of this project was (1) developing the survey list from 2,112 manufacturers in Alameda County according to the Standard Industrial Classification System, and (2) applying the survey instrument to 481 companies in SIC codes believed to produce most of the hazardous wastes and obtaining the most complete response possible, and (3) determining the types and quantities of wastes being generated in the County for land disposal. The major products of this effort are the completed responses which, when computerized, will yield all of the information required by the State in contract number 74-51087.

¹"SICC" and "SIC code" notations are used interchangeably in this project report. SIC alone refers to Standard Industrial Classification.

III. SURVEY METHODS

Development of the Sample

A stratified sample of manufacturers was selected from key industry lists of industrial plants in Alameda County. The sample was based upon the Standard Industrial Classification Code (SICC) and past investigations completed in the states of Virginia and Washington, as well as that done by the Environmental Protection Agency on hazardous waste generation. The selection of industry groups to be surveyed was in large part developed using the University of California, Sanitary Engineering Research Laboratory² study, as well as the Ventura Regional County Sanitation District's list of industry groups surveyed in October 1975.

Not all industries in every SIC code are generators of a hazardous waste; not every SIC code listed by the Bureau of Standards is represented in Alameda County. However, every SIC code for manufacturers which could be found in the studies previously mentioned was considered in developing the master list for Alameda County. The master list concentrated on industry groups in Alameda County which produce the bulk of the waste being generated for disposal. Once the master list, organized by 3- and 4-digit SIC code, of hazardous waste generating industries was formed (Appendix A), it was necessary to determine specific plants within those categories in each city in the County. This was accomplished using various lists of manufacturers provided by the Chamber of Commerce and other business and government organizations. Many such lists exist; some may be purchased (i.e., Contacts Influential, Dun and Bradstreet, etc.). Nearly all of the lists indicate at least a primary SIC code for each plant, and many plants have secondary and tertiary codes which may or may not be applicable.

The master list organized by SIC code and geographic area, was derived from the total 2,112 manufacturers in Alameda County. The list contained 481 industrial plants in the County and was divided into groups of 100+ plants located in four basic geographic areas.³ Survey instrument

²C. G. Goleuke and P. H. McGauhey, Comprehensive Studies of Solid Waste Management, Second Annual Report, University of California, SERL, Berkeley, California. See Table 23, pp. 94-96.

³A geographic area consisted of one city or several adjacent cities, depending on the number of plants to be surveyed in each city.

packets were then prepared for each group. Each was initially contacted by mail in separate two-to-four week intervals to allow time for their written response.

Survey Instrument

The survey instrument (Appendix B) was originally prepared by the Ventura Regional County Sanitation District. The method used for the development of this instrument is contained in their project report to the California State Department of Health.⁴ The application of the Ventura method in Alameda County was restricted primarily to a determination of industrial process, hazardous waste type, quantity and method of disposal. In addition, other information such as plant size and location was requested. A section F, entitled "Comments", was added to the survey form to elicit any clarifications and explanations concerning the information supplied from the respondent.

Ten Percent Sample Survey

After developing the stratified industry list, a presurvey was conducted in March 1976. The presurvey was designed to identify potential problems with either the survey form or with survey procedures before undertaking the full-scale survey in order to obtain the most accurate results possible from the full-scale survey. (See Section IV, Conduct of Survey, pp. 6-7, for explanation of problems encountered with survey form and procedures.)

A ten percent sample, 48 firms, was selected for the sample survey from the industry list according to two criteria: (1) location in the northern part of the County (the cities of Albany, Berkeley, Emeryville, and Oakland), and (2) two-digit SIC code. At least two plants from each industry group (two-digit SIC code) were included in the ten percent sample, and no effort was made to select only for large or small manufacturers, size being defined by number of employees.

The presurvey forms developed by the Ventura Regional County Sanitation District and used without modification were mailed out on February 27, 1976, along with a cover letter; a list of examples of specific hazardous chemicals or minerals that may be present as components in various waste types; and

⁴Ventura Regional County Sanitation District, Report to State Health Department.

a self-addressed, stamped return envelope. The cover letter explained the authority for and purpose of the survey and assured the firm that any data provided would be kept confidential by using it only in combination with data supplied by other manufacturers. The list of examples of hazardous materials was reproduced from the State Department of Health publication Hazardous Waste Management (February 1975, pages 13 - 15). Return of the completed survey was requested by March 10, 1976.

The Planning Department staff met with State Health Department staff from both Berkeley and Sacramento offices to discuss the survey instrument and procedures for conducting the sample survey. The industry list was divided among the seven survey team members; each person was responsible for obtaining completed forms from six to seven firms. Those companies who either failed to return the form, returned a form with incomplete responses, or replied that they produced no waste were contacted by the survey team approximately two weeks after the mailout. Interviews of plant managers or other knowledgeable personnel were then conducted by telephone or in person by the survey team in order to obtain the required information or to verify responses.

IV. HAZARDOUS WASTE SURVEY RESULTS

Conduct of Survey

Completion of the ten percent sample presurvey identified some problems and resulted in modifications of the survey form and both original contact and follow-up procedures. The survey form was redesigned to omit a section requesting information on wastewater generation because (1) this information is generally known by the sanitary and municipal utility districts in Alameda County, and (2) the survey in Alameda County was to focus on hazardous waste generation. The survey was not designed to obtain quantities of all wastewater generated. Rather, information was obtained on hazardous wastes disposed to sewer, land, and/or surface waters and on hazardous materials reclaimed or recycled. A section for comments from the respondent was added to the survey instrument. (See Appendix B). On the basis of the pre-test, it was determined that personal follow-up by a few well-trained interviewers was more successful than the use of a large field crew.

At the outset of surveying the stratified sample, it was believed that only a one hundred percent personal interview approach would produce usable results. The diversity of responses and quality of responses obtained from personal interviews during the presurvey varied widely. This experience indicated that survey procedures had to be modified. The survey was, therefore, completed using a small, trained staff of three people from the County Planning Department. Additional personnel from the State Health

Department participated when highly technical expertise was needed to obtain a difficult or complicated response. The survey technique was modified to mailout of the survey package and return by mail with telephone follow-up and in-plant interviews when necessary or requested.

Upon successful completion of pretesting and training during the first quarter of the project, the modified survey instrument package as mailed to geographic groups of 100+ manufacturers at approximately three week intervals between April 5, 1976 and June 17, 1976. Non-respondants were contacted by telephone after the deadline specified in the cover letter. Group mailings were spaced several weeks apart in order to allow adequate time for follow up. Additional survey instrument packages were mailed to respondents who could not locate the original materials. Therefore, manufacturers on the industry list were contacted in both the second and third quarters of 1976 in order to obtain a satisfactory response.

The initial response by industry to the revised methodology proved favorable; for the expected 33 to 35 percent response was achieved at the outset, and many of these required no further follow-up. The remaining 65 to 67 percent required some telephone contact follow-up either to obtain the survey form or to clear up questionable/unclear responses and to verify the status of the plant and type and quantity of waste generated. All plants reporting no waste generation were contacted.

Industry, with only a few exceptions, was quite cooperative in providing the information requested, although completeness of the responses varied considerably. Those few companies who were reluctant to cooperate were, in general, unaware of the State Health Department role in hazardous waste management and were curious about the State's authority and laws regarding hazardous wastes. At least one company was reluctant to give out any information because of the potential violations of State law in their disposal procedures. Several manufacturers indicated their willingness to cooperate in any program to solve the hazardous waste problem.

The original sample of 481 manufacturers all were mailed the questionnaire. During the response period, some of these survey packages were returned to the Planning Department unopened because the firm had gone out of business or had moved out of Alameda County. It was also determined that some companies had been incorrectly assigned to SIC codes, and these plants were removed from the survey if their correct SIC code was not included in the sample groups. With the elimination of plants not in business or moved from the County or SIC code not in the survey, the total sample was reduced to 320. The total response rate for the original stratified sample of 481 industries in Alameda County was 96 percent; the response rate for the refined sample of 320 was 94 percent.

Out of the refined sample of 320 companies, there were 300 complete responses. Table 1 illustrates a distribution of the Alameda County industrial waste survey response, specifically the number and percent of manufacturers disposing of hazardous waste materials to the sewer, to land, or to surface waters, or recycling hazardous wastes. The table lists the survey respondents (300) and non-respondents (20) by their "primary" SIC code. While many of the plants surveyed actually were assigned more than one SIC code (by the Directory of Manufacturers or Contacts Influential), a single or primary SIC code was determined for each plant for tabulation purposes.

As illustrated in Table 1, nearly half (49.7 percent) of the 300 respondents reported that they produced no hazardous wastes. Nearly one-third (30.3 percent) reported disposal of waste materials to land, either on- or off-site but primarily off-site. Approximately one sixth (16.0 percent) reported on- or off-site reclamation or recycling of waste produced. Another one sixth (15.7 percent) disposed of hazardous wastes to the sewer system; and four companies (1.3 percent) reported disposal to surface waters, including the Bay. Some of these wastes received pre-treatment (dilution, neutralization, etc.) before disposal to the sewer system or surface waters.

Off-site disposals were primarily transported to Contra Costa County.⁵ The compounds most frequently reclaimed are solvents, oils, and greases.

In presenting the responses in Table 1, it is not readily apparent that hazardous wastes are being improperly or illegally disposed to either land, sewer, or surface water. A conclusion of improper handling can only be ascertained from direct examination of the survey forms. For example, a company may or may not have a permit to dump wastes into the sewer or surface waters.

It should also be noted that a company may produce several wastes and use more than one disposal method to handle these wastes. For this reason, the number of respondents tabulated in Table 1 by type of disposal method may exceed the number of companies in the industry group; and the percentage figures may total to more than 100%.

⁵Where some disposal sites were identified, the location was Contra Costa County. Some wastes may have been transported to Solano County because in many cases, the disposal site was unknown.

Table 1

Alameda County Industrial Waste Survey
 Number and Percent of Manufacturers Disposing of Hazardous Waste to Sewer,
 Land, and/or Surface Water, or Recycling Hazardous Waste Materials

Number of Companies ¹							
SIC Code	Total Response	No Hazardous Waste	Hazardous Waste-Sewer	Hazardous Waste-Land	Hazardous Waste Recycled	Hazardous Waste-Surface Water/Bay	Responses Not Received ²
22	8	5	1	2	0	0	0
223	2	0	1	1	0	0	0
226	1	1	0	0	0	0	0
229	5	4	0	1	0	0	0
24	0	0	0	0	0	0	0
2491	0	0	0	0	0	0	0
26	9	5	0	3	2	0	2
262	3	2	0	1	0	0	1
263	2	2	0	0	0	0	0
2641	4	1	0	2	2	0	1
28	116	43	19	49	27	3	11
281	16	6	2	7	3	0	2
282	13	8	1	4	2	0	1
283	10	8	2	1	0	0	0
284	19	13	4	4	0	0	3
285	23	2	3	15	15	1	0
286	3	1	1	0	1	0	0
287	4	0	1	3	0	0	0
289	28	5	5	15	6	2	5
29	17	12	0	2	3	0	0
291	0	0	0	0	0	0	0
295	11	9	0	1	1	0	0
299	6	3	0	1	2	0	0
30	10	6	1	3	0	0	0
301	1	1	0	0	0	0	0
303	0	0	0	0	0	0	0
304	1	1	0	0	0	0	0
306	8	4	1	3	0	0	0

¹Number of companies by type of disposal method may exceed number of companies in industry group because some companies use more than one disposal method.

Table 1 (Continued)

SIC Code	Total Response	No Hazardous Waste	Hazardous Waste-Sewer	Hazardous Waste-Land	Hazardous Waste Recycled	Hazardous Waste-Surface Water/Bay	Responses Not Received ²
31	1	0	0	1	0	0	0
311	1	0	0	1	0	0	0
32	4	2	0	2	0	0	0
3292	4	2	0	2	0	0	0
33	45	31	3	8	4	1	0
331	3	1	1	1	2	0	0
332	1	1	0	0	0	0	0
333	0	0	0	0	0	0	0
334	3	2	0	1	0	0	0
335	5	1	0	4	0	0	0
336	25	21	2	1	1	0	0
339	8	5	0	1	1	1	0
34	62	27	19	14	6	0	4
3471	38	16	14	7	2	0	3
3479	24	11	5	7	4	0	1
35	11	9	2	2	1	0	0
3531	11	9	2	2	1	0	0
36	14	9	1	2	2	0	3
3612	3	3	0	0	0	0	1
3674	7	3	0	2	2	0	1
3677	1	1	0	0	0	0	0
369	3	2	1	0	0	0	1
37	3	0	1	3	3	0	0
3711	3	0	1	3	3	0	0
Totals	300	149	47	91	48	4	20
Percent of Respondants	100%	49.7%	15.7%	30.3%	16.0%	1.3%	0%

²Since these companies did not respond, data on disposal of their wastes could not be included in this table; however, their distribution among the SIC groups is relevant to the survey results.

One aspect of the survey, as applied in Ventura County, was to determine sewer-disposed hazardous wastes. In Alameda County approximately 16 percent of the plants contacted indicated sewer disposal of wastes listed which may or may not have been hazardous when they left the plant. Some respondents indicated neutralization of acids prior to disposal to sewerage system. The Alameda County survey is primarily concerned with (1) off-site land disposal in terms of the future needs for Class I - Group I material disposal areas, and (2) the potential for reclamation of these wastes. Since the focus was on land disposal waste management, no further discussion or analysis of sewer disposal will be included herein.

Present Waste Quantities

One of the central objectives of this survey was to determine hazardous waste quantity and type by SIC code. It was anticipated that a simple manipulation of the survey responses, in particular the inner table of the questionnaire, would rapidly provide access to total quantities of waste by type or chemical nature. Beginning with the survey response of 300 plants, the final group of plants which are generating some hazardous wastes not destined for sewer disposal was reduced to 114.⁶ It is this final group of manufacturers that will constitute the nucleus for further discussion and analysis herein.

A list of responses of these 114 plants is contained in Appendix C. Company names are not included in this list to preserve confidentiality. The list is arranged by SIC code and reveals the complexity of the waste types, quantities, and methods of disposal. A quick perusal of the appendix material reveals the present distribution of hazardous wastes generation and disposal. In the past, little emphasis has been made on reclamation of end products of manufacturing. Therefore, the information provided by

⁶This final group of 114 does not include companies only disposing of wastes to the sewer, and sewer disposed wastes are not tabulated in Appendices C and D.

respondants may be regarded generally as "best guess or estimate" by plant personnel. In some instances, however, the data was highly specific and backed by laboratory analyses. By far the most frequent chemicals in general categories reported in company responses were acids and bases, solvents, and oils.

Future Waste Quantities

The survey responses revealed that available information concerning future waste quantities was poor or lacking. Few companies felt confident enough about their present situation as well as knowledgeable about the future five-to-ten year period to accurately predict production or waste from production. Responses from this survey are in a confidential file at the State Department of Health. Although the data may show no pattern or correlation to the actual growth of the industry, future waste quantities could quite possibly be estimated by applying industrial growth factors for industries by SIC code to the base line data in Appendix C, assuming no significant changes in plant processes, of course. This operation is outside the scope of the survey.

Wastes with Similar Degrees of Hazard and/or Chemical or Physical Characteristics

Compilation of data on 114 industries in Alameda County (Appendix C) from the responses represents an intermediate step in organizing the wastes into groups of similar hazard or chemical characteristic. For the purpose of classifying the wastes by type, the system outlined by the State Department of Health was used.⁷ The system is as follows:

Type 1. Acid Solution.

- a. Acids
- b. Inorganic chemicals

Type 2. Alkaline Solution.

- a. Alkalies

⁷California Department of Health, Hazardous Waste Management (February 1975), pp. 13-15.

Type 3. Pesticides.

Type 4. Paint Sludge.

a. Pigments organic/inorganic

Type 5. Solvents.

Type 6. Tetraethyl Lead Sludge.

Type 7. Chemical Toilet Waste.

Not part of survey.

Type 8. Bottom Sediments Including Filter Cakes and Sludges.

Type 9. Oil.

The most prevalent chemicals found were acids, alkalies, and solvents. Because of the wide range of concentrations of the specific chemical in the waste quantity, total gallons or tons were not calculated.

V. DISCUSSION AND CONCLUSIONS

One of the major problems to overcome at the outset of this survey was the development of an accurate, stratified sample. The survey in Alameda County was based upon the best available information. Perhaps the best single source to begin the selection of pertinent SICC groups of hazardous waste generating industries is the University of California Sanitary Engineering Research Laboratory Report.⁸ Major manufacturing groups generating hazardous wastes are listed in Table 1 by SIC code. The result of this preliminary work is contained in Appendix A.

One of the primary fallacies of the SICC system is that it is a federally designated code which is rather arbitrarily applied by state and local government and industry. There was a divergence in

⁸C. G. Goleuke and P. H. McGauhey, Comprehensive Studies of Solid Waste Management, Second Annual Report, University of California, SERL, Berkeley, California (January 1969).

SICC listings noted between the local Chamber of Commerce Directory and Contacts Influential,⁹ for example. Primary and secondary SIC code designations also vary. Nonmanufacturing facilities such as warehouses and distribution centers are also assigned an SIC code identical to a manufacturer.

There does not seem to be an easy route to an accurate stratified sample; continuous refinements will be necessary. In order to streamline this process, the local regulating enforcement agency could develop a registration program for generators to complement the waste hauler report system. For local use, the system could be designed to store plant-by-plant information on air, water, and solid wastes. It could be as specific or as general as necessary. This process would be analagous to a census survey and could incorporate regular reinspections.

In general, the survey instrument developed by the Ventura Regional County Sanitation District was clear and comprehensive. Several companies, however, needed assistance in completing the form due to the complexity of their waste products and processes or to the level of understanding of the questions by the individual respondent.

The major source of confusion associated with the questionnaire was the "Estimated Concentration (% or ppm)" column on the Industrial Wastes Table of Information. Many respondents equated "estimated concentration" of the hazardous material in the total waste quantities with percent composition. The two are not directly comparable. (For example, an acidic waste of unknown concentration/dilution would be reported as comprising some percentage of the total waste mixture.)

Initially, the response rate from mailed questionnaires averaged 35 percent. Follow-up phone contact was made to improve the response rate to nearly 90 percent. The final response rate to the total sample of 481 plants was improved to 96 percent by a combination of telephone follow-up and in-plant interviews by the State Department of Health personnel. As indicated in Table 1, there are at least 20 plants outstanding for which no response was

⁹Contacts Influential is a directory of manufacturers and other business establishments, produced by Contacts Influential and sold to subscribers. It may be obtained at the Alameda County Business and Government Library.

obtained. This was due to the repeated refusal of the plant to supply information, or the lack of or inability to obtain appropriate waste assays. It is recommended that the State Department of Health consider use of its enforcement authority to obtain a response from these companies. The question also arises about the accuracy of the data provided by plant personnel. While this can be tested in the future by the State Department of Health, an approximation of the level of confidence of this data would probably fall between 85 and 95 percent. Post-test by interview to verify this confidence interval is recommended.

The data compilation of industry responses by SIC group and waste type is presented in Appendices C and D, respectively. It is further recommended that manipulation may be completed through the use of a computer. Additional analysis and synthesis of this data would be necessary if one desired total quantities by type of waste.

The conflict between SIC code and the actual industrial activity at the plant has been mentioned. Many plant operators were unfamiliar with this classification system. In terms of their general plant operations, many operators were unfamiliar, too, with waste products, unless they were extremely hazardous materials. This is indicative of the lack of attention to this detail and the need for dissemination of information to these industries by the State Department of Health. A comparison of the survey responses with the State Department of Health Waste Hauler Manifests should be made.

It is recommended that the State Department of Health survey the remaining industries, especially those in SIC Groups 35 and 37. Time and financial resource constraints limited the present survey to the previously mentioned SIC code industries.

APPENDIX A

LIST OF INDUSTRY GROUPS SURVEYED
FOR HAZARDOUS INDUSTRIAL WASTE
GENERATION IN ALAMEDA COUNTY

Appendix A

LIST OF INDUSTRY GROUPS SURVEYED FOR HAZARDOUS INDUSTRIAL
WASTE GENERATION IN ALAMEDA COUNTY

<u>SIC CODE</u>	<u>INDUSTRY GROUP</u>
22	TEXTILE MILL PRODUCTS
223	- Broad Woven Fabric Mills (inc. Dyeing and Finishing), Wool
226	- Dyeing and Finishing Textiles, exc. Wool Fabrics and Knit Goods
229	- Miscellaneous Textile Goods
24	LUMBER AND WOOD PRODUCTS, EXC. FURNITURE
249	- Miscellaneous Wood Products
2491	- Wood Preserving
26	PAPER AND ALLIED PRODUCTS
262	- Paper Mills, exc. Building Paper Mills
263	- Paperboard Mills
264	- Converted Paper and Paperboard Products, exc. Containers and Boxes
2641	- Paper Coating and Glazing
28	CHEMICAL AND ALLIED PRODUCTS
281	- Industrial Inorganic Chemicals
282	- Plastics Materials and Synthetics
283	- Drugs
284	- Soap, Detergents, Cleaners, Toilet Goods
285	- Paints, Varnishes, Laquers, Enamels, and Allied Products
286	- Industrial Organic Chemicals
287	- Agricultural Chemicals
289	- Miscellaneous Chemical Products

<u>SIC CODE</u>	<u>INDUSTRY GROUP</u>
29	PETROLEUM REFINING AND RELATED INDUSTRIES
291	- Petroleum Refining
295	- Paving and Roofing Materials
299	- Miscellaneous Products of Petroleum and Coal
30	RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS
301	- Tires and Inner Tubes
303	- Reclaimed Rubber
304	- Rubber and Plastic Hose and Belting
306	- Fabricated Rubber Products, Not Elsewhere Classified
31	LEATHER AND LEATHER PRODUCTS
311	- Leather Tanning and Finishing
32	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
329	- Abrasives, Asbestos, and Miscellaneous Nonmetallic Mineral Products
3292	- Abestos Products
33	PRIMARY METAL INDUSTRIES
333	- Primary Smelting and Refining of Nonferrous Metals
334	- Secondary Smelting and Refining of Nonferrous Metals
335	- Rolling, Drawing, and Extruding of Nonferrous Metals
336	- Nonferrous Foundries (Castings)
339	- Miscellaneous Primary Metals Products
34	FABRICATED METAL PRODUCTS
347	- Coating, Engraving and Allied Services
3471	- Electroplating, Plating, Polishing, Anodizing, and Coloring
3479	- Coating, Engraving and Allied Services
35	MACHINERY, EXCEPT ELECTRICAL
353	- Construction, Mining, and Materials Handling Machinery and Equipment

<u>SIC CODE</u>	<u>INDUSTRY GROUP</u>
3531	- Construction Machinery and Equipment
36	ELECTRICAL AND ELECTRONIC MACHINERY, EQUIPMENT, AND SUPPLIES
361	- Electrical Transmission and Distribution Equipment
3612	- Power, Distribution and Specialty Transformers
367	- Electronic Components and Accessories
3647	- Semiconductors and Related Devices
3677	- Electronic Coils, Transformers, and Other Inductors
369	- Miscellaneous Electrical Machinery, Equipment and Supplies
3691	- Storage Batteries
3692	- Primary Batteries
3693	- Radiographic X-Ray, Fluoroscopic X-Ray, Therapeutic X-Ray, and Other X-Ray Apparatus and Tubes, Electro-medical and Electrotherapeutic Apparatus
37	TRANSPORTATION EQUIPMENT
371	- Motor Vehicles and Motor Vehicle Equipment
3711	- Motor Vehicles and Passenger Car Bodies

Note: All companies in three-digit groups are included in the survey except where a four-digit group is noted. In that case, only the four-digit group was surveyed.

APPENDIX B

SURVEY INSTRUMENT PACKAGE

ALAMEDA COUNTY PLANNING DEPARTMENT

399 Elmhuist Street, Hayward, California 94544

phXXXXXXXXX
881-6401

April 5, 1976

Dear Sir:

Subject: Survey of Hazardous Waste Generation in Alameda County,
California

The Alameda County Planning Department and the Alameda County Health Care Services Agency, in coordination with the State Department of Health, are developing information on industrial waste management practices in Alameda County pursuant to State law. The Nejedly-Z'Berg-Dills Solid Waste Management and Resource Recovery Act of 1972 (Senate Bill 5) requires each county to produce a countywide solid waste management plan, and the State Guidelines for these plans require an examination of existing hazardous waste generation and management techniques. The Board of Supervisors assigned the responsibility for plan preparation to the County Planning Department who prepared a draft plan in coordination with a Solid Waste Management Plan Advisory Committee. The Plan is presently being considered by cities within the County.

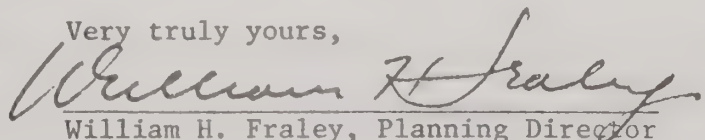
The State Department of Health is required by Assembly Bill 598 to develop and maintain a program to provide for the safe handling and disposal of hazardous wastes. This program is part of a statewide survey of hazardous industrial wastes and the subject of the present Alameda County study.

You are asked to participate in this mandatory countywide survey of industry. The information you provide will enable us to determine future waste handling techniques and to meet the land disposal needs of private industry. Enclosed is a brief questionnaire and for your information, a list of examples of specific hazardous chemicals or minerals that may be present as components in various waste types. We would appreciate completion of the enclosed form and mailed back in the post-paid envelope by Wednesday, April 21, 1976. A member of our survey team will be contacting you by telephone to provide assistance in completing the questionnaire if needed. You may also contact Ron Eggers or Susan Hootkins in the Planning Department to answer any questions regarding the survey.

Your answers on the industrial waste survey are extremely important to the accuracy of our research. The data you provide will be kept confidential by this department and the State by using it only in combination with answers supplied by others.

Thank you very much for your cooperation in this important project.

Very truly yours,



William H. Fraley, Planning Director

WHF:SH:lj
enclosures

Examples of Specific Hazardous Chemicals or Minerals that May
Be Present as Components in Various Waste Types

Type 1. ACID SOLUTION

- a. acids: sulfuric, chromic, hydrochloric (muriatic), hydrofluoric, hydrobromic, nitric, phosphoric, fluoboric, acetic, formic, fluorosulfonic, hexafluorophosphoric, hydrofluorosilicic, fuming sulfuric (oleum), perchloric, sulfurous, acrylic, fluoroacetic, chlorosulfuric.
- b. metals: iron, chromium, tin, lead, mercury, nickel, copper, beryllium, cadmium, zinc, aluminum, arsenic, barium, cobalt, titanium, vanadium, boron, selenium, antimony, silver, manganese.
- c. organics: (see Solvent, type 5)
- d. inorganics: persulfate, ammonia, hydrogen sulfide

Type 2. ALKALINE SOLUTION

- a. alkalies: sodium hydroxide (lye, caustic soda), potassium hydroxide (caustic potash), carbonate, amines, lime, ammonia
- b. organics: phenol, naphthol, organic acid salts (e.g. formate, acetate, oxalate, citrate, picrate, acrylate, fluoroacetate) (also see Solvent, type 5)
- c. inorganics: cyanide, sulfide, fluoride, nitrate, chlorate, bromate, perchlorate, mercaptans, ferrocyanide, ferricyanide.

Type 3. PESTICIDES

- a. organophosphates: demeton (Systox), disulfoton (Di-Syston), mevinphos (Phosdrin), parathion, phorate (Thimet), shradan (OMPA), tetraethylpyrophosphate (tepp), thionazin (Zinophos), Bidrin, DDVP (dichlorvos), ethion (Nialate), dioxathion (Delnov), carbophenothion (Trithion), EPN, methyl parathion, phosphanidon (Dimecron).
- b. chlorinated hydrocarbons: aldrin, dieldrin, endrin, BHC, chlordan, endosulfan (Thiodan), heptachlor, lindane, toxaphene, chlorobenzilate, DDT, DDD (TDE), methoxychlor, mirex, 2,4,5-T, 2,4-D.
- c. carbamates: zectran, carbaryl (Sevin)
- d. miscellaneous: fluoroacetate (compound 1080), carbamate, Temik, pentachlorophenol, sodium arsenite, lead arsenate, calcium cyanide, SMDC (Vapam), rotenone.
- e. solvents: (see Solvent, type 5)

Type 4. PAINT SLUDGE

- a. solvents: (see Solvent, type 5)
- b. pigment metals: titanium, zinc, chromium, molybdenum, iron, cadmium, barium
- c. other toxic ingredients: cyanide, mercury, organotin compounds, phenols, selenium

Type 5. SOLVENT

- a. hydrocarbons: aliphatic, aromatic, kerosene, gasoline
- b. oxygenated: aldehydes, ketones, esters, alcohols, ethers, glycols, glycol esters, glycol ethers, glycol ether-esters
- c. other: chlorinated and fluorinated products, terpenes
- d. miscellaneous organics: amines, acids, mercaptans, methyle sulfate, nitrocresols, nitrophenols, phenols, tetranitromethane, chloropicrin, etc.

Type 6. TETRAETHYL LEAD SLUDGE

tetraethyl lead and other organic lead, lead oxide

Type 7. CHEMICAL TOILET WASTES

caustic soda, cresylic acid, hypochlorite, formaldehyde, zinc sulfate. Information on chemical toilet preparations may be obtained from the manufacturer.

Type 8. TANK BOTTOM SEDIMENT

Any toxic, flammable, or corrosive materials in the sediment.

Type 9. OIL

Any toxic, flammable, or corrosive constituents in the oil.

Type 10. DRILLING MUD

- a. acids: (see Acid Solution, type 1)
- b. alkalies: (see Alkaline Solution, type 2)
- c. metals: barium, chromium. Data on the major constituents of drilling muds may be available from the manufacturers.

Type 11. CONTAMINATED SOIL AND SAND

Any toxic, flammable, explosive, or corrosive substances in the soil or sand. In the case of blasting sand which may contain paint residue, see type 4, Paint Sludge, Pigment Metals and Other Toxic Components.

Type 12. CANNERY WASTE

Type 13. LATEX WASTE

Type 14. MUD AND WATER

Type 15. BRINES

Any toxic, flammable, explosive or corrosive substances that may be present.

SOURCE: California Department of Health, Hazardous Waste Management (February, 1975), pp1 13-15.

8. Please indicate the names of haulers and off-site disposal facilities utilized for:

Liquids _____
(Hauler) (Disposal Site)

Solids _____
(Hauler) (Disposal Site)

C. DEPARTMENT OF HEALTH

Are your waste managers acquainted with California Department of Health's rules and guidelines for handling hazardous wastes? Yes ☐ In Part ☐ No ☐

D. RESOURCES RECOVERED

What materials are recovered from your operation's wastes? By whom? (ck. below)

_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
(Material recovered)	(Annual amount)	(Company) (Others)

E. BRANCH INFORMATION

1. How many people are employed in your operations?
1-20 ☐ 21-50 ☐ 51-100 ☐ 101-500 ☐ 501 or more ☐

2. How much area do your operations occupy?
Land area _____ acres Floor area _____ sq. ft.

3. What is the present age of your facilities?
Under 5 years ☐ 5-30 years ☐ over 30 years ☐

F. COMMENTS

STATE OF CALIFORNIA
INDUSTRIAL WASTE SURVEY

FOR AGENCY USE

I.D. _____

By Mail ☐ In Person ☐

Interviewer _____

Date _____

Primary SIC: _____

Secondary SIC: _____

A. GENERAL INFORMATION

1. Company _____

2. Branch _____

3. _____
(Street & No.) (City) (Zip) (Phone)

4. Person Interviewed _____
(Name) (Title) (Phone)

B. INDUSTRIAL WASTES

1. Do your operations produce any kind of waste? Yes ☐ No ☐

If so, does your waste or waste mixture have any of the following properties?

(Please check all that are applicable)

Carcinogenic ☐ Flammable ☐

Corrosive ☐ Irritant/strong sensitizer ☐

Explosive ☐ Toxic ☐

Nontoxic ☐

2. Does your operation's waste generate pressure through decomposition, heat, or other means? Yes ☐ No ☐

3. Does your operation's waste generation change seasonally? Yes ☐ No ☐
If yes, when does peak occur? _____

(Please specify time period)

4. How are your operation's wastes stored prior to disposal/transportation? .

Barrels (not steel) ☐ Special packaging ☐

Concrete encased ☐ Steel drums ☐

Open yard ☐ Tanks ☐

Plastic encased ☐ Warehouse ☐

Ponds ☐ Other _____

Pressure containers ☐ (Please specify)

None stored ☐

5. Are wastes combined in storage? Yes ☐ No ☐

6. Will your compliance with current federal water and air pollution control standards result in your having to develop special procedures for disposing of industrial wastes beyond methods now employed? Yes ☐ No ☐

7. Please complete the industrial wastes table of information (centerfold) for your operations. (Insert sheet illustrates typical samples.)

THANK YOU VERY MUCH FOR YOUR COOPERATION

INDUSTRIAL WASTES TABLE OF INFORMATION

[illegible]

STATE OF CALIFORNIA
Industrial Waste Survey
WASTE MANAGEMENT PROCEDURES AND PROCESSES KEYS

Please use the procedures and processes keys noted below to complete the four right-hand columns of the Industrial Wastes Table of Information and Section II.

DISPOSAL POINT

- 1 On-site Treatment
- 2 On-site Disposal
- 3 Off-site Disposal

VOLUME REDUCTION PROCESSES

- 4 Compacting
- 5 Composting
- 6 Crushing
- 7 Digestion
- 8 Evaporation
- 9 Incineration
- 10 Lagooning
- 11 Shredding
- 12 Other (Specify)

TREATMENT PROCESSES

Physical

- 13 Absorption
- 14 Clarification
- 15 Filtration
- 16 Flocculation
- 17 Flotation
- 18 Gravity Separation
- 19 Other (Specify)

Chemical

- 20 Coagulation & Chemical Precipitation
- 21 Ion Exchange
- 22 Membrane Processes
- 23 Neutralization
- 24 Oxidation-Reduction
- 25 Precipitation
- 26 Other (Specify)

Note: See sample on reverse side

TREATMENT PROCESSES

Biological

- 27 Activated Sludge
- 28 Anaerobic Digestion
- 29 Oxidation Ponds
- 30 Trickling Filters
- 31 Other (Specify)

DISPOSAL PROCESSES

- 32 Bay
- 33 Composting
- 34 Evaporation
- 35 Holding Tank or Pond
- 36 Incineration
- 37 Injection Well
- 38 Land Burial
- 39 Land Spreading
- 40 Ocean
- 41 Recycling
- 42 Sanitary Landfill - Class I
- 43 Sanitary Landfill - Class II-III
- 44 Septic Tank
- 45 Sewer
- 46 Surface Water
- 47 Other (Specify)

RECLAMATION PROCESSES

- 48 Bacteria and fungi control
- 49 Corrosive, chemically active substances removal
- 50 Desalination
- 51 Dissolved solids removal
- 52 Heavy metals removal
- 53 Odorous substances removal
- 54 Radioactive materials removal
- 55 Suspended solids removal
- 56 Toxic substances removal
- 57 Other (Specify)

Insert

INDUSTRIAL WASTES
TABLE OF
INFORMATION

PROCESS	ASSOCIATED WASTE	ESTIMATED CONCENTRATION (% or ppm)	PHYSICAL STATE	ANNUAL VOLUME: TONS OR GALLONS			DISPOSAL POINT (1-3)	Please use key sheet	
				PRESENT	5 YEARS	10 YEARS		Volume Reduction (4-12)	Treatment (13-31)
A. Chromium Plating	1. Chromic acid (Cr ⁺⁶) 2. Other chromium salts (Cr ⁺³) 3. Trace organics	3,000 ppm 200 ppm 100 ppm	Liquid	500 bbl/mo	600 bbl/mo	800 bbl/mo	3	None	23
B. Metal Finishing	1. Chromic acid 2. Sulfuric acid 3. Chromium (III) salts 4. Lead 5. Copper	12.5 % 20 % 5-10 % 500 ppm 600 ppm	Liquid	1,000 gal/mo	200 gal/mo	300 gal/mo	3	None	None
C. Paint Manufacture	1. TiO ₂ 2. Chromium +6 salts 3. Selenium compounds	5 % 1 % 100 ppm	Liquid	100 gal/mo	100 gal/mo	200 gal/mo	3	None	None
D. Steel Manufacture	1. Pigment 2. Aromatic hydrocarbons 3. Chromium salts	0.00 ppm 0.00 ppm 0.00 ppm	Liquid	10 ⁴ gal/mo	10 ⁴ gal/mo	10 ⁴ gal/mo	2	10	14
E. Industrial Laundry	1. Trichloroethylene 2. Freon 113 3. Freon 114	1,000 ppm 1,000 ppm 500 ppm	Liquid	100 gal/day	150 gal/day	200 gal/day	3	None	21
F. Laboratory Waste	1. Nitric acid 2. Hydrochloric acid 3. Lead	1,000 ppm 1,000 ppm 500 ppm	Liquid	100 gal/mo	100 gal/mo	100 gal/mo	1	8	21
G. Metal Etching	1. Hydrofluoric acid 2. Sulfuric acid 3. Copper	20 % 50 % 5 %	Sludge	700 gal/mo	750 gal/mo	800 gal/mo	3	None	25

APPENDIX C

INDUSTRY RESPONSES BY SICC GROUP

APPENDIX C

INDUSTRY RESPONSES BY SIC GROUP

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal ¹
1.	264	Paper Coating	a) Petroleum solvent residue (90%)	125 G ²	41
2.	264	Printing	a) Solvents-oxygenated (50%)	8,000 G	42
		Adhesive Laminating	a) Solvents-oxygenated (40%)	4,000 G	42
			b) Organics (10%)	4,000 G	42
4.	281	N ₂ O Mfg.	a) Sulfuric acid (5%)	6,000 G	38 or 39
			b) Potassium hydroxide (5%)	6,000 G	38 or 39
			c) KMnO ₄ (10%)	6,000 G	38 or 39
5.	281	Clean and Pretreat	a) Emulsified oil (50%) and Phosphoric acid (1/2%)	660 G	42
		Spray Paint	a) Pigment metals (15%), Solvents (3%), Vehicle-standard (15%), and Emulsifying Agents (40%)	1,320 G	42
6.	262	Painting	a) Solvents (? ³)	600 G	38
7.	264	Printing	a) Solvents, etc. (20-100%)	18,000 G	42
7a.	264	PVCD Coater	a) Polyvinylidene chloride	5,000 G	39
8.	281	Scrubbing/Gas Mfg.	a) Arsenic trioxide (15%)	1,200 L ⁴	42
			b) NaOH (1%)	140 T ⁵	42
			c) LiOH (9%)	75 T	42
			d) Oil (100%)	750 L	42
			e) NaOH and KOH (10%)	2,400 L	42
9.	281	Isotope Production	a) Nonradioactive acids: H ₂ SO ₄ (50%), HCl (20%), HNO ₃ (30%)	1,000 G	42
			b) Nonradioactive bases: NH ₄ NO ₃ (?)	1,000 G	42

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
10.	281	Food Grade Acid Production	a) AsS (highly toxic) (100%)	31 T	42
11.	281	Sodium Bisulfate Mfg.	a) HCl (0.1%)	356,000 G	35
			b) Washings: soap and inorganic salts (100 ppm)	130,000 G	35
			c) Oil and synthetic surfactant (10 ppm)	13,000 G	35
12.	282	R & D Laboratory	a) Acid solutions: Chromium (50-100 ppm), Aluminum (200 ppm), H ₂ SO ₄ (3%)	3,000 G	42 (?)
			b) Organic solvents (resin in aromatic and oxygenated)	1,200 G	42
13.	282	Cloth Impregnation, Waste Resin	a) Solutions-plastic resins and organic solvents (50% solids)	90 T	42
			b) Solutions-plastic resins, organic solvents, and methylene chloride (80% solids)	18 T	42
			c) Methylene chloride to be reclaimed	72 T	41
14.	282	Mixing of inks, Solvents, and Adhesives	a) Triethylacetate sludge (containing solvents and ink) (100%)	9,900 G	38
14a.	282	Container Cleaning	a) Methylene chloride (50%)	5,280 G	41
15.	283	Drugs, Pharmaceuticals	a) Nitrobenzene (99%)	84 G	38
			b) Carbon tetrachloride (99%)	48 G	38
			c) Chloroform (99%)	48 G	38
			d) Toluene (99%)	48 G	38
16.	284	Epsom Salt Mfg.	a) Solid waste (80%) containing: FeSO ₄ , Fe ₂ O ₃ , MgSO ₄ , CaSO ₄ , SiO ₂	1,200 T	42
17.	284	Cleaning Compound Mfg.	a) Aromatic hydrocarbons (100%)	120 G	42
			b) Chlorinated hydrocarbons (100%)	120 G	42

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
			c) Phosphoric acid (75%)	120 G	42
			d) Phosphates-solid (100%)	120 L	42
18.	284	Detergent and Cleaning Com- pound Blending	a) Caustic soda	2 T	43
			b) Soda ash	2 T	43
			c) Metasilicate	2 T	43
19.	284	Detergent Mfg.	a) Inorganic salts (2%) - Na ₂ SO ₄ , NaCl silicates, phosphates, and linear alkyl sulfonates (LAS) (3%)	36,000 G	42
20.	285	Paint and Ink Mfg.	a) Waste containing: Hydro- carbon solvents (20%), Oxygenated solvents (10%), Chromium oxide (.01%)	100 G	38
21.	285	Paint Mfg.	a) Solvents (100%)	5.5 G	42
22.	281	Compressed Gas Mfg.	a) Oil (100%)	50 G	41
23.	285	Paint Mfg.	a) Solvents and pigments (?)	3,600 - 4,800 G	41
24.	285	Paint Mfg.	a) Solvents and pigments (?)	1,000 - 1,500 G	41
25.	285	Lacquer Mfg.	a) Waste containing: Nitro- cellulose (8%), Esters- Ketones (18%), Alcohols (9%), Hydrocarbons (33%)	300 G	38
26.	285	Paint Mfg.	a) Paint solvents	0.5 T	43
27.	285	Paint, Varnish, and Lacquer Mfg.	a) Solvents (55%)	100,000 G	42
			b) Paint, varnish, lacquer, etc.	10,000 G	38
28.	285	Paint Mfg.	a) Wash thinner (solvents), wash water, and pigments (?)	2,600 G	41

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
29.	285	Paint Mfg.	a) Liquid waste containing: Ketones (40%), Alcohols (43%), Lead chromates (4%)	900 G	32, 42
30.	285	Paint Mfg.	a) Solvent (?)	1,500 G	41
31.	285	Paint Mfg.	a) NaOH (15%) b) Hydrocarbons (50%) c) Solvents-oxygenated (100%) d) Organic acids (1%) e) Hydrocarbons (10%) f) Hydrocarbons (40%) g) Solvents-oxygenated (100%) h) NaOH (15%)	4,000 G 3,000 G 5,000 G 30,000 G 30,000 G 5,000 G 5,000 G 4,000 G	41, 42 42 42 42 42 42 42 42
32.	285	Paint Mfg.	a) Waste containing: Glycols (.002%), Glycol-ethers (.002%), Aliphatic hydro- carbons (.02%)	60,000 G	42
33.	285	Paint Mfg.	a) Solvents (?)	660 G	39
34.	285	Paint Mfg.	a) Aliphatic hydrocarbons (90%) b) Caustic solution (10-15%)	33,600 G 2,400 G	42 42
35.	285	Paint Mfg.	a) Waste containing: Aromatic hydrocarbons (32%), Ali- phatic hydrocarbons (13%), Ketones (35%), Alcohols (4%), Glycol-ethers (2%), Glycol-ether-esters (1%), miscellaneous organics (0.5%), miscellaneous chromates (0.5%)	21,600 G	41
36.	285	Paint Mfg.	a) Paint sludge containing: Oil, pigments, toluene-indus., mineral spirits, Chevron #265 (conc.s unknown)	10 G	41

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
37.	285	Paint Mfg.	a) Petroleum distillate (95%)	2,500 G	41
38.	285	Paint Mfg.	a) Solvents (80%)	5,000 G	41
38a.	285	Paint Mfg.	a) Solvents-petroleum distillates (?)	20,000 G	41
39.	286	Inorganic Industrial Chemical, Solvent Packaging	a) Petroleum solvents (100%)	2,000 G	41
40.	287	Pesticide Mfg.	a) Waste containing: Dorsban (1,000 ppm), Diazinon (1,000 ppm), Malathion (1,000 ppm)	110 G	42
41.	287	Cartridge Fertilizer Mfg.	a) Agriculture fertilizers (100%)	0.125 T	42
42.	287	Ant Bait Mfg.	a) Arsenic trioxide (0.35%)	1.2 T	42
43.	289	Adhesive Mfg.	a) Waste containing: Naptha (80-90%), Toluene (10%), 1,1,1,-Trichloroethylene (5%), Alcohols (small)	2.5 T	38
44.	289	Adhesive Mfg.	a) Hexane (30%) b) Toluene (15%) c) Acetone (11%)	1,155 G 400 G 320 G	42 42 42
45.	289	Solvent Based Printing Ink Mfg.	a) Solvent waste containing: solvents-hydrocarbons (10%), solvents-oxygenated (40%), organics-misc. (1%)	8,250 G	42
46.	289	Cleaning Mixing Tanks	a) Solvents (50%)	2,500 G	41
47.	289	Printing Ink Mfg.	a) Aliphatic solvents (10%) b) Caustic cleaning solutions KOH (30%) c) Organic pigments (4%) d) Organic solvents (4%)	6,600 G 52,800 G 8,000 G 8,000 G	42 42 42 42

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
48.	289	Adhesive Mfg.	a) Waste containing: NaOH (100 ppm), vinyl acetate (600 ppm), trichloroethylene (10 ppm), dibutylphthalate (10 ppm), HNO ₃ (50 ppm)	30,000 G	42
49.	289	Adhesive Resin Mfg.	a) Phenolic resins in H ₂ O-nonhazardous (100 ² ppm)	604,800 G	42
50.	289	Agriculture Chemical and Metal Working Chemical Mfg.	a) Tank bottoms with pesticides (?) b) ZnOH, NiOH, and Chrome OH (1%)	4,400 G	42
51.	289	PVA Emulsion Mfg.	a) Sludge (22-40% solids): TVS-emulsion solids (5%), Fe (11%), Cl (0.3%), Cu (0.26%), Pb (89 ppm), Zn (280 ppm), Hg (2.5 ppm)	600 T	42
52.	289	Adhesive Mfg.	a) Waste containing: NaOH (10%), organics (trace 1%)	23,100 G	42
53.	289	Printing Ink Mfg.	a) Waste containing: chromium salt lead (1 ppm), Ni and Cu (1.5 ppm)	6,600 G	42
54.	289	Ink Blending	a) Cleaning solvent (99%) b) Solvent, ink waste (50%) c) Oil ink waste (10%)	2,500 G 2 T 0.2 T	41 42 43
55.	289	Printing Ink Mfg.	a) Salts - Cr, Pb, Cu, Ba, Ti, Mn, Fe, Al (print on waste bags)-(7%) (nonhazardous)	3 T	43
56.	289	Battery Acid Mfg.	a) Dichromic acid and sulfuric acid (0.5-5%)	4,800 G	42
57.	289	Paste Department	a) Ink ends (10%) b) Solvents (alcohols) (90%) c) Solvents (alcohols) (90%) d) Ink ends, sludge (10%)	77 G 693 G 2,772 G 308 G	42 42 42 42

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
58.	289	Can Sealants Mfg, Cooper Dept.	a) Waste containing: Aliphatic hydrocarbons (18%), aro- matic hydrocarbons (2%)	6,000 G	42
		Solvent Wash	b) Solvent	3,000 G	41
58a.	289	Printing Ink Mfg.	a) Lead chromates (?)	25 L	43
			b) Lead molybdates (?)	25 L	43
			c) Aliphatic hydrocarbons (?)	250 L	43
58b.	289	Ink Mfg.	a) Colored Pigments (?)	2,500 L	39
59.	295	Industrial Asphalt Mfg.	a) Waste oil (1%)	250 T	41
59a.	295	Asphalt Emulsion Mfg.	a) Asbestos (0.1%)	10 T	43
			b) Caustic (0.05%)	8,000 G	42, 34
60.	299	Oil Compounding	a) Oil/Solvents (100%)	600 G	41
61.	299	Tank Cleaning	a) Mineral spirits (100%)	1,245 G	41
62.	299	Oil Reprocessing	a) Acid sludge (50%)	70,000 G	42
			b) Filter cake (100%)	22.5 T	42
			c) Filter cake, dust oil (?)	0.25 T	42
			d) Solvent distillation, still bottoms (100%)	6,000 G	42
63.	306	Fabricated Rubber Products	a) Solvent (small amount)	?	39
63a.	306	Rubber Compounding	a) Waste dust stop oil (?) (napthenic oil base)	11,000 G	42
64.	311	Leather Tanning Finishing	a) Trivalent chromium (18 ppm)	250 T	42
65.	329	Brake Lining Mfg.	a) Asbestos dust (15%)	25 T	43
66.	329	Brake Bonding	a) Asbestos, linings (?)	52 T	43
			b) Asbestos, dust (?)	26 T	43
67.	334	Aluminum Refining	a) $AlCl_3$ (aluminum chloride) (90%)	2T	42

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
68.	334	Aluminum Smelting	a) Al and Fe dross and slag	240 T	41, 42
69.	331	Steel Mfg.	a) Baghouse dust, iron oxide and zinc oxide dusts	1,200 T	41
69a.	331	Steel Mfg.	a) Flue and baghouse dust (45% ZnO)	3,000 T	41
70.	332	Iron Melting	a) Slag - Al_2O_3 , SiO_2 , CaO, MgO b) Molding SiO_2 , Coal	14,000 T 1,200 T	42 42
71.	335	Laboratory Waste	a) Waste containing: Fluoride (F) (241 ppm), chromium; total (Cr) (10 ppm), chro- mium (Hexavalent +6) (3 ppm), Calcium (Ca) (156 ppm), potassium (K) (454 ppm), iron (Fe) (5 ppm), sodium (Na) (1,284 ppm), aluminum (Al) (131 ppm), magnesium (Mg) (60 ppm), zinc (Zn) (1 ppm)	360,000	42
		Fume Scrubbing	b) NaOH (10%)	10,000 G	42
		?	c) Coolant, soluble oil (8%)	20,000 G	42
		Refractory Lab	d) Cr +6 (1%)	23,760 G	42
71a.	335	Metal Forging	a) Baghouse dust	49 T	43
72.	335	Machinery Service	a) Oil, drawing wire (100%) b) Oil, other (100%)	1,000 G 800 G	42 42
73.	335	Copper Wire Drawing	a) Fatty acid soap (5%) with copper sludge	12,000 G	42
74.	336	Aluminum Die Casting	a) Al slag, dross, etc. (?)	60 D ⁶	41
75.	336	Degreasing	a) Oil (?)	100 G	41
76.	336	Die Casting	a) Al dross (?) b) Copper alloys (?)	15 T trace	41 41
77.	336	Brass Melting	a) Zinc dust (?)	4.8 T	42-3

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
78.	339	Degreasing	a) Oil sludge-triperchlorate (?)	660 G	41
79.	339	Heat Treating	a) Oils, mixed (40 ppm)	600 G	38
80.	346	Forge Hammer Operations	a) Oil (?)	100 G	42
81.	347	Metal Finishing and Grinding	a) Iron (60%)	13,200 G	42
			b) Al (40%)	2,640 G	42
			c) Copper (3%)	480 G	42
			d) Chromium (5%)	600 G	42
			e) Titanium (0.5%)	12 G	42
			f) Trichloroethylene (?)	12 G	34
			g) Kerosene (90%)	120 G	42
82.	347	Chromium Plating	a) Chromic acid (5,000 ppm)	100,800 G	42
			b) NaOH (10%)	10,080 G	42
			c) HCl solution (20%)	15,120 G	42
83.	347	Chromium and Copper Plating	a) Chromic acid (5,000 ppm)	151,200 G	42
			b) NaOH (1%)	15,120 G	42
			c) CuSO_4 solution (2,000 ppm)	5,040 G	42
84.	347	Chrome Plating	a) Chromic acid (1%)	360 G	42
84a.	347	Hot Dip Galvanizing	a) Zinc ammonium chloride and zinc (?)	72 T	41
85.	347	Baked Enamel Finishing	a) Paint sludge (?)	5,500 G	42
			b) Thinner, 9 types (?)	700 G	41
86.	347	Metal Pickling	a) Sulfuric acid, H_2SO_4 (10%)	8.5 G	39
87.	347	Casting Cleaning	a) Acetone (90%) and polyester plastic (10% in acetone)	300 G	41
88.	347	Metal Finishing	a) Aluminum (10 ppm)	0.4 T	43
89.	347	Metal Finishing	a) Metal stripper (?)	0.1 T	41

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
90.	347	Metal Cleaning and Etching	a) Caustic (67%)	5,280 G	35
		Porcelain Enamel Mfg.	b) Sulfuric acid (4-5%)	2,760 G	35
			a) Cadmium (1.04 ppm)	?	?
			b) Chromium (19.5 ppm)	?	?
			c) Iron (10.30 ppm)	?	?
			d) Nickel (9.0 ppm)	?	?
91.	347	Painting Sheet Metal	a) Paint (alkyd enamel) and Sludge (66%)	1,200 G	38
92.	347	Sign Painting and Enamel Baking	a) Solvent, paint thinner (?)	356 G	43
93.	347	Metal Pickling	a) Sulfuric acid, H_2SO_4 (10%)	11.4 G	39
93a.	347	Porcelain Enameling	a) Paint (Scotchkote #203) sludge (?)	25 L	43
94.	347	Plating (Cr, Ni, Cu)	a) NiCl (12.5%)	71 G	42
			b) $NiSO_4$ (23.4%)	71 G	42
			c) Boric acid (4.7%)	71 G	42
			d) Chromic acid (23.4%)	71 G	42
95.	347	Chrome Plating	a) Waste containing: Chrome (+6)-(5%), Ba_2SO_4 (90%), trace metals (1%)	55 G	42
		Metal Finishing	b) H_2SO_4 (40%)	110 G	42
96.	347	Etching (Cu and Brass)	a) Waste containing: $FeCl_3$ (24%), HCl (muriatic acid) (3%), copper (8%)	300 G	34
		Etching (Al)	b) Waste containing: HCl (9%), Ammonium bifluoride-highly toxic, strong irritant (1%), copper crystals (2%), Al (10%)	420 G	34
		Whitening Al	c) Waste containing: Ammonium bifluoride (11%) and Al (8%)	120 G	34
		Cleaning Al	d) Waste containing: NaOH (10%) Al (7%)	60 G	34

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
		Solvents	e) Solvent waste containing: Kerosene (55%), Chevron #250 (35%), lacquer thinner (10%)	660 G	41
97.	353	Parts Cleaning	a) Trichlorethylene sludge (10%)	8 T	41
		Machine Operation	a) Waste oils and solvents (100%)	60,000 G	41
98.	353	Trailer Cleaning	a) Tank bottoms - dirt, oil, grease	6,000 G	38
99.	366	Metal Finishing	a) Nitric acid (25%)	4 G	42
			b) Misc. acids - brite dip (35%)	25 G	42
100.	371	Industrial Waste Treatment Facility	a) Waste sludges containing: chromium (37 ppm), nickel (227 ppm), oil and grease (1.72 ppm), lead (585 ppm), titanium (840 ppm)	380,000 G	42
		Spray Paint Opera- tions	b) Sludges containing: lead (1.1%), nickel (589 ppm), chromium (0.32%)	190 Y ⁷	42
		Dip Plant Operations	c) Filter residues containing: chromium (14 ppm), phenols (21 ppm), solvents- ketones (3.5%)	1,500,000 G	42
		Paint Grate Cleaning	d) Alkaline solution (50%) and heavy metals (?)	23.8 T	42
		Spray Equipment Solvent	d) Blended solvent (50%)	34,200 G	41
		Process Fluids, Fill Operation	f) Motor oil, transmission fluid, antifreeze, brake fluid (?)	20,000 G	41
101.	371	Metal Cleaning	a) Untreatable wastewater: phosphoric acid (2-7%), chrome +6, +3 (500 ppm), total phosphates (300 ppm)	96,000 G	35
		Truck Painting	a) Cleaning solvents (?)	2,000 G	41
			b) Paint sludge (?)	36 T	42
			c) Waste paint (?)	2 T	42

Appendix C (Continued)

Co. No.	SICC	Process	Waste Type (Concentration)	1976 Annual Quantity	Disposal
		Truck Mfg.	a) Waste oil (?)	1,200 G	41
			b) Waste glycol antifreeze (?)	5,000 G	41
			c) Waste diesel fuel (?)	2,000 G	41
102.	367	Board Cleaning	a) Waste containing: Freon (95%), dirt and oil (5%)	3,000 G	41
		Board Etching	a) Waste containing: Ferric chloride (80-85%), Copper (15-20%)	720 G	41
103.	367	Metal Plating	a) Lead oxide (50%)	0 04 T	42
104.	371	Spray Booth	a) Caustic wastewater, pH 3.5-4	40,000 G	42
		Drain Out of Test	a) Engine oil and antifreeze (100%)	2,600	?
		Oil and Antifreeze Painting	a) Solvents (?)	6,000 G	41

¹Key to disposal processes is as follows:

- 32 Bay
- 33 Composting
- 34 Evaporation
- 35 Holding tank or pond
- 36 Incineration
- 37 Injection well
- 38 Land burial
- 39 Land spreading
- 40 Ocean
- 41 Recycling
- 42 Sanitary landfill - Class I
- 43 Sanitary landfill - Class II-III
- 44 Septic tank
- 45 Sewer
- 46 Surface water

²Gallons

³Information unknown by respondent is indicated by "?".

⁴Pounds

⁵Tons

⁶Drums

⁷Cubic Yards

APPENDIX D

INDUSTRY RESPONSES BY WASTE TYPE

APPENDIX D

INDUSTRY RESPONSES BY WASTE TYPE

SICC	Co. No.	Waste Type	Quantity
TYPE 1. ACID SOLUTION			
281	4.	Sulfuric acid, 6,000 G @ 5%	6,000 G
	5.	Emulsified oil (50%) and Phosphoric acid ($\frac{1}{2}\%$)	660 G
	9.	Sulfuric (50%), hydrochloric (20%), and nitric (30%) in 1,000 G @ 30%	1,000 G
	11.	Hydrochloric 356,000 G @ 0.1%	356,000 G
282	12.	Acid solution -- H_2SO_4 (3%), Aluminum (200 ppm), Chromium (50-100 ppm) 3,000 G, as indicated	3,000 G
284	17.	Phosphoric acid, 120 G @ 75%	120 G
289	48.	Nitric acid, 30,000 G @ 50 ppm	-- ¹
	56.	Dichromic and sulfuric acid, 4,800 G @ .5-5%	4,800 G
299	62.	Acid sludge, 70,000 G @ 50%	
347	82.	Chromic acid, 100,800 G @ 5,000 ppm	100,800 G
		Hydrochloric acid, 15,120 G @ 20%	15,120 G
	83.	Chromic acid, 151,200 G @ 5,000 ppm	151,200 G
	84.	Chromic acid, 360 G @ 1%	360 G
		Sulfuric acid 8.5 G @ 10% landspreading	(8.5 G)
		Sulfuric acid 2,760 G @ 4-5%	2,760 G
	93.	Sulfuric acid Boric acid 71 G @ 4.7%	(71 G)
	94.	Chromic acid, 71 G @ 23.4%	71 G
		Sulfuric acid, 110 G @ 40%	110 G

¹Combined with alkalai, etc. See entry Alkaline 289, No. 48.

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
	96.	Acid Ferric Chloride, 300 G @ 24% (with hydrochloric acid (3%) and copper (8%))	300 G
		Hydrochloric acid, 420 G @ 9% (with ammonium bifluoride (1%), copper crystals (2%), and aluminum (10%))	420 G
366	99.	Nitric acid 4 G @ 25%	4 G
		Miscellaneous acids (brite dip), 25 G @ 35%	25 G
371	101.	Phosphoric acid, 96,000 G @ 2-7% (contaminated with chrome +3 and +6, 500 ppm; total NO ₄ , 300 ppm)	96,000 G

TYPE I. ACID SOLUTIONS--ORGANIC ACIDS

285		Organic acids, 30,000 G @ 5%	Reclaimed
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TYPE I. ACID SOLUTIONS--INORGANIC CHEMICALS

281	4.	Potassium permanganate, 6,000 G @ 5%	6,000 G
	8.	Arsenic trioxide, 1,200 L @ 15%	1,200 L
	10.	Arsenic sulfide (AsS), 31 T	31 T
	11.	Washings: soaps and inorganic salts, 130,000 G (110 ppm)	130,000 G
284	16.	FeSO ₄ , Fe ₂ O ₃ , MgSO ₄ , CaSO ₄ , SiO ₂ , 1,200 T @ 80%	1,200 T
	17.	Phosphates - solid, 120 L @ 100 %	120 L
	18.	Caustic soda, 2 T	2 T
		Soda ash, 2 T	2 T
		Metasilicate, 2 T	2 T
	19.	Inorganic salts - Na ₂ SO ₄ , NaCl, silicates, phosphates, and linear alkyl/sulfonates 36,000 G @ 2-5%	36,000 G
285	29	Ammoniacle compounds and mecurial compounds, trace in 900 G included with solvents	

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
287	41.	Ag fertilizers (cartridge type), .125 T	.125 T
289	58a.	Lead chromates, 25 L	25 L
		Lead molybdates, 25 L	25 L
	58b.	Colored pigments, 2,500 L	2,500 L
295	59a.	Asbestos, 10 T @ 0.1%	10 T
311	64.	Trivalent chromium, 250 T @ 18 ppm	250 T
329	65.	Asbestos (brake), 25 T @ 18 ppm	25 T
	66.	Asbestos, lining (brake), 52 T	52 T
		Asbestos, dust (brake), 26 T	26 T
331	63a.	Flue and baghouse dust, 3,000 T (45% ZnO)	Reclaimed
	69.	Baghouse dust, 1,200 T	Reclaimed
332	70.	Slag, Al_2O_3 , SiO_2 , CaO, MgO, 14,000 T	14,000 T
		Molding SiO_2 , Coal, 1,200 T	1,200 T
334	67.	Aluminum chloride ($AlCl_3$), 2 T	2 T
	68.	Aluminum and iron dross and slag, 240 T	-- ²
335	71.	Lab waste, mean concentrations: fluoride, 241 ppm; chromium (total) 10 ppm; chromium (+6) 3 ppm; calcium 156 ppm; potassium 454 ppm; iron 5 ppm; sodium 1,284 ppm; aluminum 131 ppm; magnesium 60 ppm; zinc 1 ppm; cyanide 0.4 ppm	360,000 G
		Refractory lab waste, Cr +6, 23,760 G @ 1%	23,760 G
	71a.	Baghouse dust, 49 T	49 T
336	74.	Aluminum slag dross, 60 drums	Reclaimed
	76.	Aluminum dross, 15 T	Reclaimed
		Copper alloys, trace	Reclaimed
	77.	Zinc dust, 4.8 T	4.8 T
347	81.	Iron, 132,000 G @ 60%	132,000 G
		Aluminum, 2,640 G @ 40%	2,640 G
		Copper, 480 G @ 3%	480 G
		Chromium, 600 G @ 5%	600 G
		Titanium, 12 G @ 0.5%	12 G

²Some reclaimed, part landfilled.

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
	83.	Copper Sulfate solution, 5,040 G @ 2,000 ppm	5,040 G
	84a.	Zinc ammonium chloride and zinc, 72 T	Reclaimed
	88.	Aluminum, .4 T @ 10 ppm	.4 T
	90.	Cadmium, 1.04 ppm	Vol. unkn.
		Chromium, 19.5 ppm	Vol. unkn.
		Iron, 1,030 ppm	Vol. unkn.
		Nickel, 9.0 ppm.	Vol. unkn.
	94.	Nickel chloride, 12.5%; nickel sulfate, 23.4%	71 G
	95.	Chrome (+6), 5%; barium sulfate 90%; trace metals 1%	55 G
	96.	Ammonium bifluoride, 11%; and aluminum, 8%; in 120 G	120 G
367	102.	Ferric chloride 80-85%; and copper, 15-20%; in 720 G	Reclaimed
371	100.	Industrial waste treatment - chromium, 37 ppm; nickel, 227 ppm; lead, 585 ppm; titanium; oil and grease 17.2 ppm in 380,000 G	380,000 G
	103.	Lead oxide, 0.04 T @ 50%	0.04 T

TYPE 2. ALKALINE SOLUTIONS

a. Alkalies

281	4.	Potassium hydroxide, 6,000 G @ 5%	180 G
	8.	Sodium hydroxide, 140 T @ 1% @ 8.3 pounds/gallon =	1,162 G
		Lithium hydroxide, 75 T @ 9%	622.5 L
		Sodium and potassium hydroxide, 2,400 G @ 10%	2,400 G
		NaOH + KOH, 2,400 L (10%)	2,400 L
	9.	Aluminum nitrate, 1,000 G	1,000 G
285	31.	Sodium hydroxide, 3,000 G @ 15%	3,000 G
	34.	Caustic solution, 2,400 G @ 10-15%	2,400 G
289	48.	Sodium hydroxide, 30,000 G @ 100 ppm	30,000 G
	50.	Zinc hydroxide, nickel and chrome hydroxide, 48,000 G @ 1%	48,000 G
	52.	Sodium hydroxide, 23,100 G @ 10%	23,100 G

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
295	59a.	Caustic, 8,000 G @ 0.05%	8,000 G
347	82.	Sodium hydroxide, 10,080 G @ 10%	10,080 G
	83.	Sodium hydroxide, 15,120 G @ 1%	15,120 G
	90.	Caustic, 5,280 G @ 6-7%	5,280 G
	91.	Paint (alkyd enamel) sludge, 1,200 G @ 66%	1,200 G
	93a.	Paint (Scotchkote #203) sludge, 25 pounds	25 L
	96.	Sodium hydroxide, 60 G @ 10% (with aluminum, 7%)	60 G
335	71.	Fume scrubbing, NaOH, 10,000 G @ 10%	10,000 G
371.	100.	Alkaline solutions, 23.8 T @ 50% (heavy metal contamination)	23.8 T
	101.	Caustic wastewater, 40,000 G, no conc. given	40,000 G
	47.	Caustic cleaning solution (KOH), 52,800 G @ 30%	52,800 G

TYPE 3. PESTICIDES

287	40.	Dorshan, Diazinon and Malathion, 110 G @ 1,000 ppm	110 G
	42.	Arsenic trioxide, .2 T @ .35%	.2 T
	50.	Tank bottoms with pesticides, 4,400 G	4,400 G

TYPE 4. PAINT SLUDGE
a. Pigments Organic/Inorganic

285	23.	Solvents and pigments, 3,600 - 4,800 G	Reclaimed
	24.	Solvents and pigments, 1,000 - 1,500 G	Reclaimed
	28.	Wash thinner and wash water and pigments, 2,600 G	Reclaimed
	29.	Lead chromates, 900 G	900 G
	36.	Paint sludge, oil and pigments 10 G	Reclaimed
	53.	Chromium salt lead, Ni + Cu, 6,600 G @ 1-1.5 ppm	6,600 G

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
	54.	Oil ink waste, .2 T @ 10%	.2 T
	57.	Ink ends, 77 G @ 10%	77 G
		Ink ends, 308 G @ 10%	308 G
347	85.	Paint sludge, 5,500 G	5,500 G
	89.	Paint stripper, .1 T	.1 T
		Metal stripper, .1 T	.1 T
	101.	Paint sludge, 36 T	36 T
		Waste paint, 2 T	2 T

TYPE 5. SOLVENTS			
262	6.	Solvents, 600 G	600 G
264	1.	Petroleum solvent residue, 125 G @ 90%	125 G
	2.	Solvents-oxygenated, 8,000 G @ 50%	8,000 G
		Solvents-oxygenated, 4,000 G @ 40%	4,000 G
		Organics, 4,000 G @ 10%	4,000 G
	7.	Solvents, 18,000 G @ 20-100 %	18,000 G
	7a.	Polyvinylidene chloride, 5,000 G @ 50%	5,000 G
281	5.	Solvents, 1,320 G @ 3%	1,320 G
282	12.	Organic solvents, 1,200 G (resin in aromatic and oxygenated solvent)	1,200 G
	13.	Plastic resins and organic solvents, 90 T @ 50% solids	90 T
		Plastic resins and organic solvents/methylene chloride 18 T @ 80% solids, 72 T to be reclaimed	18 T
	14.	Triethylacetate (2-ethylbutyl acetate), 9,900 G @ 100 %	9,900 G
	14a.	Methylene chloride, 5,280 G @ 50%	Reclaimed
283	15.	Nitrobenzene, 84 G @ 99%	84 G
		Carbon tetrachloride, 48 G @ 99%	48 G
		Chloroform, 48 G @ 99%	48 G
		Toluene, 48 G @ 99%	48 G

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
284	17.	Aromatic hydrocarbons, 120 G @ 100 % Chlorinated hydrocarbons, 120 G @ 100 %	120 G 120 G
285	20.	Hydrocarbons and oxygenated solvents, 100 G @ 10-20%	100 G
	21.	Solvents, 5.5 G @ 100 %	5.5 G
	25.	Nitrocellulose, 8%; esters - Ketones, 18%, and alcohols, 9%, all in 300 G	300 G
	26.	Solvents, .5 T	.5 T
	27.	Solvents, 100,000 G @ 55% Paint varnish lacquers, 10,000 G	100,000 G 10,000 G
	29.	Ketones, 40%, and alcohols, 43%, in 900 G	900 G
	30.	Solvent, 1,500 G	Reclaimed
	31.	Hydrocarbons, 3,000 G @ 50% Solvents-oxygenated, 5,000 G @ 100% Hydrocarbons, 30,000 G @ 10% Hydrocarbons, 5,000 G @ 40% Solvents-oxygenated, 5,000 G @ 100 %	3,000 G 5,000 G 30,000 G 5,000 G 5,000 G
	32.	Glycols, .002%; glycol-ethers, .002%; and aliphatic hydrocarbons, 0.02%, all in 60,000 G	60,000 G
	33.	Solvents, 660 G	660 G
	34.	Aliphatic and aromatic hydrocarbons, 33,600 G @ 90%	33,600 G
	35.	Aromatic hydrocarbons, 32%; aliphatic hydrocarbons 13%; ketones 35%; alcohols 4%; glycolethers 2%; glycol- etheresters 1%; miscellaneous organics .5%; and miscellaneous chromates .5%	(21,600 G) Reclaimed
	36.	Industrial toluene, mineral spirits + Chevron 265 (quantity unknown)	Reclaimed
	37.	Petroleum distillate, 2,500 G @ 95%	2,500 G
	38.	Solvents, 5,000 G @ 80% Solvents-Petroleum distillates, 20,000 G	Reclaimed Reclaimed
286	29.	Petroleum solvents, 2,000 G	Reclaimed
289	43.	Naptha, 80-90%; toluene 10%+; 1,1,1 - Trichloroethylene 5%; alcohols, small quantity, in 2.5 T	2.5 T
	45.	Solvents hydrocarbons 10%; solvents oxygenated 40%; Miscellaneous organics 5%, in 8,250 G	8,250 G

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
	44.	Hexane, 1,155 G @ 30% Toluene, 400 G @ 15% Acetone, 320 G @ 11%	1,155 G 400 G
	46.	Solvents, 2,500 G @ 50%	Reclaimed
	47.	Aliphatic solvents, 6,600 G @ 10% Organic pigments and solvents, 8,000 G @ 4%	6,600 G 8,000 G
	48.	Vinyl acetate, 600 ppm; trichloroethylene 10 ppm; dibutylphthalate 10 ppm (part of 30,000 G combined and talled under NaOH alkalines)	
	54.	Cleaning solvent, 2,500 G @ 99% Solvent, ink waste, 2 T @ 50%	Reclaimed Reclaimed
	57.	Solvents/alcohols, 693 G @ 90% Solvents/alcohols, 2,772 G @ 90%	693 G 2,772 G
	58.	Aliphatic hydrocarbons, 6,000 G @ 18% Aromatic hydrocarbons, 6,000 G @ 2%	
	58a.	Aliphatic hydrocarbons, 250 pounds	250 L
299	60.	Oil/solvents, 600 G @ 100 %	600 G
	61.	Mineral spirits, 1,248 G @ 100 %	1,248 G
306	63.	Solvent	Vol. unkn.
347	81.	Trichloroethylene, 12 G Kerosene, 120 G @ 90%	12 G 120 G
	85.	Thinner, 700 G	Reclaimed
	87.	Acetone +10% polyester plastic 300 G @ 90%	Reclaimed
	89.	Trichloroethylene .9% @ 100%	Reclaimed
	92.	Solvent, paint thinner, 356 G	356 G
	96.	Kerosene, 55%; Chevron 250-35%; lacquer thinner 10% in 660 G	Reclaimed
353	97.	Waste oils with solvents, 60,000 G	Reclaimed
371	100.	Solvents (Ketones), 52,500 G Blended solvent, 34,200 G @ 50%	52,500 G Reclaimed
	103	Solvents, 6,000 G	Reclaimed

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
TYPE 6. TETRAETHYL LEAD SLUDGE			
All lead compounds listed under Type 1. Acid Solution--Inorganics or Type 2. Alkaline Solutions.			

TYPE 7. CHEMICAL TOILET WASTES			
Not part of this survey.			

TYPE 8. TANK BOTTOM SEDIMENT (Including Filter Cakes and Sludges)			
289	51.	Sludge (22-40% solids) TVS emulsion solids, 5%; Fe, 11%; Cl, 0.3% Cu, 0.26%; Pb, 89 ppm; Zn, 280 ppm; Hg, 2.5 ppm	600 T
299	62.	Filter cake, 22.5 T @ 100 % Filter cake, dust oil, .25 T Still bottoms, solvent distillation, 6,000 G @ 100 %	22.5 T .25 T 6,000 G
335	73.	Sludge, fatty acid soap with copper, 12,000 G @ 5% (copper wire drawing)	12,000 G
353	97.	Sludge, trichloroethylene, 8 T @ 10%	Reclaimed
	98.	Tank bottoms - dirt, oil, grease, 6,000 G	6,000 G
371	100.	Sludges: lead 1.1%; nickel 589 ppm; chromium 0.32% in 190 cubic yards Filter residue: chromium 14 ppm; phenols 21 ppm; and solvents (ketones) 3.5% (see solvent section), in 1,500,000 G	190 Y 1,500,000 G

Appendix D (Continued)

SICC	Co. No.	Waste Type	Quantity
TYPE 9. OIL			
281	5.	Emulsified oil (50%) and phosphoric acid ($\frac{1}{2}\%$), 660 G	660 G
	8.	Oil, 750 pounds	750 L
	11.	Oil and synthetic surfactant, 13,000 G, 10 ppm	13,000 G
281	22.	Oil, 50 G @ 100%	Reclaimed
295	59.	Waste oil, 250 T @ 1%	250 T
306	63a.	Waste dust stop oil (napthenic oil base), 11,000 G	11,000 G
335	71.	Coolant, soluble oil, 20,000 G @ 8%	20,000 G
	72.	Oil, drawing wire, 1,000 G @ 100%	1,000 G
		Oil, other, 800 G	800 G
336	75.	Oil, degreasing, 100 G	Reclaimed
339	78.	Oil sludge, degreasing, 660 G	Reclaimed
	79.	Oils, mixed, 600 G @ 40 ppm.	600 G
346	80.	Oils, forge hammer operations, 100 G	100 G
371	100.	Motor oil, transmission fluid, antifreeze, brake fluid, 20,000 G	Reclaimed
	101.	Waste oil, 1,200 G	Reclaimed
		Waste glycol antifreeze, 5,000 G	Reclaimed
		Waste diesel fuel, 2,000 G	Reclaimed
367	102.	Freon, 95% in 3,000 G	Reclaimed
		Dirt and oil, 5% in 3,000 G	
371	104.	Engine oil and antifreeze, 2,600 G (disposal unknown)	2,600 G

NOTE: Tabulation represents those wastes being disposed to land or reclaimed.

APPENDIX E

INDUSTRY LIST, ORIGINAL MAILING

NOTE: This list is the original mailing list for the hazardous industrial waste survey. Some of these companies have moved or closed, and some are classified under incorrect SIC codes. Refer to completed survey forms for most accurate address/telephone/SICC listing.

HAZARDOUS INDUSTRIAL WASTE SURVEY
INDUSTRY LIST, ORIGINAL MAILING

ALAMEDA COUNTY, MARCH 1976

ALAMEDA

Anderson Manufacturing Company
759 Blenheim St., Alameda, CA 94501
Phone: 568-3816
SIC: 3471, 3599

Cam Tool Company, Incorporated
2005 Clement Ave., Alameda, CA 94501
Phone: 522-0077
SIC: 3531

Paceco, A Division of Fruehauf
Corporation
2350 Blanding Ave., Alameda, CA 94501
Phone: 522-6100
SIC: 3531

Pitchometer Propeller Company
2516 Blanding Ave., Alameda, CA 94501
Phone: 522-2616
SIC: 3362, 3599

ALBANY

Adhesive Products, Incorporated
520 Cleveland Ave., Albany, CA 94710
Phone: 526-7616
SIC: 2891, 2641

Airco Viking, Division of Airco,
Incorporated
544 Cleveland Ave., Albany, CA 94710
Phone: 526-4881
SIC: 3391, 3462, 3398, 3463

Alcan Metal Powders, Incorporated,
Division of Alcan Aluminum Corporation
1069 - 2nd St., Albany, CA 94710
Phone: 526-3722
SIC: 3399, 3295, 2851

Western Forge and Flange
540 Cleveland Ave., Albany, CA 94710
Phone: 524-6831
SIC: 3391, 3463, 3462, 3494

BERKELEY

A & B Die Casting Company
1417 - 4th St., Berkeley, CA 94710
Phone: 525-0717
SIC: 3361

Advance Research, Incorporated
1326 - 9th St., Berkeley, CA 94710
Phone: 527-5255
SIC: 2842

American Supply Company
1108 Blake St., Berkeley, CA 94702
Phone: 843-0275
SIC: 3531

Bao Jin Hsueh
1409 - 5th St., Berkeley, CA 94710
Phone: 527-4558
SIC: 2844, 2899

Barr Chemical Products, Incorporated
2748 - 9th St., Berkeley, CA 94710
Phone: 848-1954
SIC: 2819, 3861

Berkeley Art Foundry
1231 - 4th St., Berkeley, CA 94710
Phone: 525-3617
SIC: 3361, 3362

Berkeley Asphalt Company
699 Virginia St., Berkeley, CA 94710
Phone: 526-1611
SIC: 2911, 2951

Berkeley Biologicals
2nd & Hearst Streets, Berkeley, CA 94710
Phone: 843-6846
SIC: 2831

Berkeley Brass Foundry
2629 - 7th St., Berkeley, CA 94710
Phone: 845-6952
SIC: 3361, 3362, 3369, 3565

Berkeley Custom Electronics, Incorporated
2302 Roosevelt Ave., Berkeley, CA 94703
Phone: 843-4180
SIC: 3674

Berkeley Forge and Tool
1330 - 2nd St., Berkeley, CA 94710
Phone: 526-5034
SIC: 3391, 3462, 3463

Hazardous Industrial Waste Survey
Industry List - Page 2

Berkeley Readymix
699 Virginia St., Berkeley, CA 94710
Phone: 526-9022
SIC: 3531, 3273

Chromex
2743 - 8th St., Berkeley, CA 94710
Phone: 849-1916
SIC: 3471

Colgate - Palmolive Company
2700 - 7th St., Berkeley, CA 94710
Phone: 845-1500
SIC: 2841, 2844

Converters Ink Company
635 Cedar St., Berkeley, CA 94710
Phone: 524-2772
SIC: 2893

The Cosmetic Chemist
1221 - 8th St., Berkeley, CA 94710
Phone: 525-5842
SIC: 2844

Cutter Laboratories
4th & Parker Streets, Berkeley, CA 94710
Phone: 841-0123
SIC: 2831, 2834

Cyclotron Corporation
950 Gilman St., Berkeley, CA 94710
Phone: 524-8670
SIC: 2299

De Soto Incorporated
1608 - 4th St., Berkeley, CA 94710
Phone: 526-1525
SIC: 2851

D. M. Silver Plating Company
1954 University Ave., Berkeley, CA 94704
Phone: 848-0405
SIC: 3471

Dura Belting Company
715 Heinz Ave., Berkeley, CA 94710
Phone: 841-2612
SIC: 3069, 3041, 3199

Elco Manufacturing Company
742 Delaware St., Berkeley, CA 94710
Phone: 848-5955
SIC: 2992, 3586, 3599

Electro-Coatings, Incorporated
893 Carleton St., Berkeley, CA 94710
Phone: 849-4075
SIC: 3471, 3599

Far-Best Corporation, O. L. King Division
640 Gilman St., Berkeley, CA 94710
Phone: 525-2534
SIC: 2992

Finishing Process Company
1821 - 5th St., Berkeley, CA 94710
Phone: 841-2756
SIC: 3471

Green Chemical Products
801 Gilman St., Berkeley, CA 94710
Phone: 525-7730
SIC: 2851

Industrial Engravers
800 Addison St., Berkeley, CA 94710
Phone No's: 843-7856 & 843-7648
SIC: 3479, 2753, 3544, 3953

Industrial Silver Company
1717 - 4th St., Berkeley, CA 94710
Phone: 527-7100
SIC: 3339

Johnson Gear & Manufacturing Company, Ltd.
921 Parker St., Berkeley, CA 94710
Phone: 845-7376
SIC: 3398, 3462

Leber Ink Company
2832 - 10th St., Berkeley, CA 94710
Phone: 849-3183
SIC: 2893

Lomax Paint Company
2222 - 3rd St., Berkeley, CA 94710
Phone: 548-1520
SIC: 2851

Manassee-Block Tanning Company
1300 - 4th St., Berkeley, CA 94710
Phone: 525-8648
SIC: 3111

Metal Finishing, Division of Veriflow
Corporation
800 Bancroft Way, Berkeley, CA 94710
Phone: 841-0151
SIC: 3471, 3479

Hazardous Industrial Waste Survey
Industry List - Page 3

Metro-Overland Manufacturing Company
675 Cedar St., Berkeley, CA 94710
Phone: 526-4177
SIC: 2899, 2992

Monsen Plating & Silversmiths
3370 Adeline St., Berkeley, CA 94703
Phone: 655-0890
SIC: 3471, 3914

National Starch & Chemical
742 Grayson St., Berkeley, CA 94710
Phone: 841-4530
SIC: 2891

Ohio Medical Products, Division of
Airco Incorporated
1231 - 2nd St., Berkeley, CA 94710
Phone: 526-3365
SIC: 2813

Pacific Pressure-Cast Products
1210 - 4th St., Berkeley, CA 94710
Phone: 525-0366
SIC: 3361, 3362, 3565

Philadelphia Quartz Company of
California
801 Grayson St., Berkeley, CA 94710
Phone: 845-1048
SIC: 2841, 2819, 2847

P. K. Machine Company
5861 Christie Ave., Berkeley, CA 94710
Phone: 658-1132
SIC: 2821

Proen Products Company
9th & Grayson Streets, Berkeley, CA
Phone: 848-5504
SIC: 2875

Reliance Sheet & Strip Company
722 Folger Ave., Berkeley, CA 94710
Phone: 843-3123
SIC: 3479, 3444

Rucraft Incorporated
707 Jones St., Berkeley, CA 94710
Phone: 526-2550
SIC: 3361, 3362, 3429

Ryder Chemical Company
701 Heinz Ave., Berkeley, CA 94710
Phone: 843-3473
SIC: 2842

Scott, R. W. & Company
2345 - 4th St., Berkeley, CA 94710
Phone: 843-3835
SIC: 3069, 3293

SKS Die Casting, Division of Whittaker
Corporation
2200 - 4th St., Berkeley, CA 94710
Phone: 843-1844
SIC: 3361

Snowline Corporation
1330 - 9th St., Berkeley, CA 94710
Phone: 525-4010
SIC: 2294

Stainless Polishing Corporation
840 Potter St., Berkeley, CA 94710
Phone: 548-7620
SIC: 3471

Stayner Corporation
2531 - 9th St., Berkeley, CA 94710
Phone: 843-9100
SIC: 2834

Tenneco Chemicals, Incorporated,
California Ink Division
711 Camelia St., Berkeley, CA 94710
Phone: 525-1188
SIC: 2816, 2851, 2893, 3555

Thompson, A. H. Company
300 Cedar St., Berkeley, CA 94710
Phone: 526-8686
SIC: 2851

Triangle Paint Company
2222 - 3rd St., Berkeley, CA 94710
Phone: 845-6931
SIC: 2851

Tri-City Paint Company
1220 - 4th St., Berkeley, CA 94710
Phone: 525-3600
SIC: 2851

Tuttle Manufacturing Company
725 Gilman St., Berkeley, CA 94710
Phone: 525-1311
SIC: 3479, 3561

Unicorn Chemical Coatings, Incorporated
dba Standard Paint Company
700 Allston Way, Berkeley, CA 94710
Phone: 848-2863
SIC: 2851

Hazardous Industrial Waste Survey
Industry List - Page 4

Universal Anchors Company
950 Parker Ave., Berkeley, CA 94710
Phone: 548-2636
SIC: 3391, 3425, 3441

Utility Body Company
901 Gilman St., Berkeley, CA 94710
Phone: 524-9333
SIC: 3531

West Company
1840 - 4th St., Berkeley, CA 94710
Phone: 548-1570
SIC: 2842

Willis-Moore Paint Specialties
1840 - 4th St., Berkeley, CA 94710
Phone: 549-0934
SIC: 2851

EMERYVILLE

American Brass & Copper Company
1295 - 67th St., Emeryville, CA 94608
Phone: 658-7212
SIC: 3479

American Rubber Manufacturing Company
1145 Park Ave., Emeryville, CA 94608
Phone: 652-0800
SIC: 3069, 3041

Clearprint Paper Company
1482 - 67th St., Emeryville, CA 94608
Phone: 652-4762
SIC: 2621, 2641

Electro Coatings, Incorporated
1401 Park Ave., Emeryville, CA 94608
Phone: 655-0507
SIC: 3471, 3599

General Converting Corporation
1315 - 63rd St., Emeryville, CA 94608
P. O. Box 8395, Emeryville, CA 94662
Phone: 653-2950
SIC: 2641, 2643

Go-Jo Industries, Incorporated
6221 Hollis St., Emeryville, CA 94608
Phone: 658-2889
SIC: 2842, 2899

Golden West Paint Manufacturing Company
1355 Park St., Emeryville, CA 94608
Phone: 652-3920
SIC: 2851

Haultain-Champion Company, Incorporated
4512 Hollis St., Emeryville, CA 94608
Phone: 653-8200
SIC: 3069, 3041

Hubbard & Company
1250 - 45th St., Emeryville, CA 94608
Phone: 652-6600
SIC: 3479, 3429, 3463, 3644, 3316

Hydraulic Controls, Incorporated
1330 - 66th St., Emeryville, CA 94608
Phone: 658-8300
SIC: 3531

Judson Steel Corporation
4200 Eastshore Highway, Emeryville, CA 94608
Phone: 652-3530
SIC: 3312

Medi-Physics, Incorporated
5855 Christie Ave., Emeryville, CA 94608
Phone: 658-2184
SIC: 2819

Metalco
1475 - 67th St., Emeryville, CA 94608
Phone: 652-7470
SIC: 3471

Michel & Pelton Company
5743 Landregan St., Emeryville, CA 94608
Phone: 652-1610
SIC: 2879, 2833, 2841, 2842, 2844

Pabco Paint Corporation
1710 - 59th St., Emeryville, CA 94608
P. O. Box 8502, Emeryville, CA 94662
Phone: 658-7626
SIC: 2815, 2851, 2816

Hazardous Industrial Waste Survey
Industry List - Page 5

Pemko Manufacturing Company
5755 Landregan St., Emeryville, CA 94608
P. O. Box 8216, Emeryville, CA 94662
Phone: 653-2033
SIC: 3316, 3351, 3442

Pfizer Company, Incorporated
4650 Shellmound St., Emeryville, CA 94608
Phone: 652-4806
SIC: 2816

Porter Coatings Company, Division of
Porter Paint Company
5900 Christie Ave., Emeryville, CA 94608
Phone: 653-7733
SIC: 2851

Product Finishing Company
1335 Stanford Ave., Emeryville, CA 94608
Phone: 654-0425
SIC: 3471, 3479

Progressive Marking Products Company
6015 Christie Ave., Emeryville, CA 94608
Phone: 654-8791
SIC: 3069, 2753

Ralphs-Pugh Company, Incorporated
1718 - 63rd St., Emeryville, CA 94608
Phone: 658-9824
SIC: 3041

Ransome Company
4030 Hollis St., Emeryville, CA 94608
Phone: 652-3600
SIC: 2951

Sherwin Williams Company
1450 Sherwin Ave., Emeryville, CA 94608
Phone: 652-2700
SIC: 2851

Western Die Casting Company
4065 Hollis St., Emeryville, CA 94608
Phone: 652-9622
SIC: 3361, 3362, 3369

FREMONT

Amchem Products
37899 Niles Blvd., Fremont, CA 94536
Phone: 797-1430
SIC: 2819, 2899

Bay Area Steel Cutting Corporation
2400 Prune Ave., Fremont, CA 94538
Phone: 657-1200
SIC: 3479

Betta Ink Company
3125 Peralta Blvd., Fremont, CA 94536
Phone: 793-1962
SIC: 2899, 2893

Borden Chemical Company
41100 Boyce Rd., Fremont, CA 94538
Phone: 657-4500
SIC: 2821, 2869, 2891

Building Block Construction
44250 Warm Springs Blvd., Fremont, CA 94538
Phone: 657-4444
SIC: 3531

Colemans Aluminum Products
38591 Canyon Heights Dr., Fremont, CA 94536
Phone: 797-5079
SIC: 3361

Dan-De Products Corporation
37270 Niles Blvd., Fremont, CA 94538
P. O. Box 3416, Fremont, CA 94538
Phone: 657-7272
SIC: 3041, 3541, 3599, 3079

Ethyl Corporation, Visqueen Division
37350 Blacow Rd., Fremont, CA 94536
Phone: 797-2820
SIC: 2818, 2821, 3079

Foster, Benjamin Company, Division of
Amchem Products, Incorporated
37899 Niles Blvd., Fremont, CA 94536
Phone: 797-0313
SIC: 2891

Hazardous Industrial Waste Survey
Industry List - Page 6

General Magnetics & Electronics
44255 Fremont Blvd., Unit E
Fremont, CA 94538
Phone: 656-9580
SIC: 3612

Industrial Asphalt, Division of
Gulf Oil Corporation
37245 Sequoia Rd., Fremont, CA 94536
Phone: 793-0130
SIC: 2951, 3531

LaPointe Plastics
2154 Prune Ave., Fremont, CA 94538
Phone: 657-6262
SIC: 2821, 2541

Mission Paint Manufacturing
4111 Pestana Pl., Fremont, CA 94538
Phone: 651-0800
SIC: 2851

Zing Manufacturing Company
38713 Northdale Circle, Fremont, CA 94536
Phone: 797-3020
SIC: 2891

HAYWARD

Acme Fiberglass Company
29240 Pacific St., Hayward, CA 94544
Phone: 538-3440
SIC: 2819

Acme Jeweler & Engraver
24453 Mission Blvd., Hayward, CA 94544
Phone: 582-1188
SIC: 3479

Alco Metal Polishing
2111 National Ave., Hayward, CA 94545
Phone: 783-5143
SIC: 3471

Apex Metals
18 Traynor St., Hayward, CA 94541
Phone: 537-1151
SIC: 3471

Baker, J. T. Chemical Company
995 Zephyr Ave., Hayward, CA 94544
Phone: 471-6225
SIC: 2819, 2869

Bay Plastics
30150 Industrial Pkwy., SW, Hayward, CA 94544
Phone: 471-5000
SIC: 2821, 3079

Brush Wellman, Incorporated, The
24353 Clawiter Rd., Hayward, CA 94545
Phone: 782-9600
SIC: 3369

Castrol Oils, Incorporated
1944 Sabre St., Hayward, CA 94545
Phone: 785-7484
SIC: 2911

Concise Casting Corporation
3197 Depot Rd., Hayward, CA 94545
Phone: 783-2170
SIC: 3361, 3544, 3362

Corad, Incorporated
25181 Huntwood Ave., Hayward, CA 94545
P. O. Box 3795, Hayward, CA 94544
Phone: 783-3800
SIC: 3479, 3079, 2851

Crane, J. C. Service
2750 Naples St., Hayward, CA 94544
Phone: 785-2617
SIC: 3531

Cryovac Company
25954 Eden Landing Rd., Hayward, CA 94545
Phone: 357-0830
SIC: 2641

D. C. Compounders
2469 American Ave., Hayward, CA 94545
Phone: 782-9322
SIC: 2899

Diablo Systems, Incorporated
24500 Industrial Blvd., Hayward, CA 94545
Phone: 783-3910
SIC: 3674, 3573

Digematrix, Incorporated
20954 Corsair Blvd., Hayward, CA 94545
Phone: 783-5614
SIC: 3674

Drum Chem Clean, Incorporated
22903 Atherton St., Hayward, CA 94545
Phone: 582-2711
SIC: 2811

Hazardous Industrial Waste Survey
Industry List - Page 7

English Brothers Pattern & Foundry
2337 American Ave., Hayward, CA 94545
Phone: 783-5700
SIC: 3361, 3362, 3565

Epoxy Coatings Company
29651 Pacific St., Hayward, CA 94544
Phone: 538-2659
SIC: 2891

Fibreboard Machine Design
31800 Hayman St., Hayward, CA 94545
Phone: 489-3900
SIC: 2621

Field Engraving Company
2560 Castro Valley Blvd., Castro Valley,
CA 94546
Phone: 537-9319
SIC: 3479, 2753, 2754

Flint Ink Corporation
27403 Industrial Blvd., Hayward, CA 94545
Phone: 785-3772
SIC: 2893

Freeman, C. E. Company
3590 Enterprise Ave., Hayward, CA 94545
Phone: 783-4171
SIC: 2851

Hayden Weaves
1273 Industrial Pkwy, W., Hayward, CA 94544
Phone: 886-4210
SIC: 2299

Hayward Pattern Shop
21440 Oak St., Hayward, CA 94546
Phone: 581-7848
SIC: 3361, 3429, 3565

Heathtec Finishes
26415 Corporate Ave., Hayward, CA 94545
Phone: 783-3324
SIC: 3471, 3479

Herrick Corporation, The
25450 Clawiter Rd., Hayward, CA 94545
Phone: 782-7600
SIC: 3531

Hy-Tone Metal Finishing
1716 W. Winton Ave., Hayward, CA 94545
Phone: 782-1600
SIC: 3471

Industrial Boxboard
2249 Davis Ct., Hayward, CA 94545
Phone: 785-6500
SIC: 2631, 2649, 2653, 2654

International Plasma Corporation
25222 Cypress Ave., Hayward, CA 94544
Phone: 783-2067
SIC: 3674

La Vista Quarry, Division of East
Bay Excavating Company, Incorporated
28814 Mission Blvd., Hayward, CA 94544
Phone: 538-5080

Mack Trucks Export Corporation
21301 Cloud Way, Hayward, CA 94545
Phone: 783-4100
SIC: 3531, 3711

Magna Tek Systems, Incorporated
23850 Clawiter Rd., Hayward, CA 94545
Phone: 785-0100
SIC: 3674, 3662

Matheson Scientific Company
24800 Industrial Blvd., Hayward, CA 94545
Phone: 783-2500
SIC: 2899

Metalform
2250 Davis Ct., Hayward, CA 94545
Phone: 783-7313
SIC: 3479, 3443

Midland Division of the Dexter Corporation
31500 Hayman St., Hayward, CA 94544
Phone: 471-7171
SIC: 3479, 2851

Nokomis International Incorporation
23364 Clawiter Rd., Hayward, CA 94545
Phone: 782-8811
SIC: 2842

Oliver Brothers Salt Company
4150 Salt Way, Hayward, CA 94557
P. O. Box 155, Mt. Eden, Hayward, CA 94557
Phone: 782-8828
SIC: 2899

Orcon Corporation
22735 Sutro St., Hayward, CA 94541
Phone: 886-6500
SIC: 2231, 3552

Hazardous Industrial Waste Survey
Industry List - Page 8

Perry Tool and Research Company
25183 Huntwood Ave., Hayward, CA 94544
Phone: 782-9226
SIC: 3399, 3544

Phillips Chemical Manufacturing
26329 Ventura Ave., Hayward, CA 94544
Phone: 785-5544
SIC: 2899

Precision Cutting and Welding
2209 American Ave., Hayward, CA 94545
Phone: 783-3454
SIC: 3479, 3499

Protein Instantizers
2125 American Ave., Hayward, CA 94545
Phone: 785-0566
SIC: 2834

Quantel Corporation
3474 Investment Blvd., Hayward, CA 94545
Phone: 783-3410
SIC: 3674, 3573

Rainproof Systems
27285 Industrial Blvd., Hayward, CA 94545
Phone: 534-4764
SIC: 2899

Rohm & Haas California Incorporated
25500 Whitesell Dr., Hayward, CA 94540
Phone: 785-7000
SIC: 2821

Rubber Engineering and Development
1975 National Ave., Hayward, CA 94545
Phone: 782-3233
SIC: 3069, 3293

San Lorenzo Manufacturing Company,
Incorporated
2111 National Ave., Hayward, CA 94545
Phone: 785-9420
SIC: 3361, 3446

Shaklee Corporation
2035 National Ave., Hayward, CA 94545
P. O. Box 3625, Hayward, CA 94544
Phone: 785-7300
SIC: 2834, 2842, 2844

Sinclair & Valentine Company,
Division of Wheelabrator-Frye, Incorporated
24301 Southland Dr., Hayward, CA 94545
Phone: 785-9336
SIC: 2893

Sonoco Products Company
25101 Clawiter Rd., Hayward, CA 94545
Phone: 782-2722
SIC: 2621, 2655

Spectromagnetic Industries, Division
of Physics International
25393 Huntwood Ave., Hayward, CA 94544
Phone: 782-1300
SIC: 3674

Speedee Manufacturing Company
27641 Industrial Blvd., Hayward, CA 94545
Phone: 783-1545
SIC: 2815, 3469, 3544, 3599

Stauffer Chemical Company
1999 National Ave., Hayward, CA 94545
Phone: 782-2911
SIC: 2842

Stayner Corporation
2391 W. Winton Ave., Hayward, CA 94707
Phone: 785-4000
SIC: 2834

Swift and Company
2074 National Ave., Hayward, CA 94545
Phone: 783-5161
SIC: 2891

Tic Tac Tape Company, Incorporated
24821 Huntwood Ave., Hayward, CA 94544
Phone: 782-9779
SIC: 2641

Unimedia
2301 Industrial Pkwy W., Hayward, CA 94545
Phone: 782-2600
SIC: 2815

Union Ice Company - Chemical Division
26 West A St., Hayward, CA 94541
Phone: 785-5866
SIC: 2813

Hazardous Industrial Waste Survey
Industry List - Page 9

United Foam Corporation
30955 San Antonio St., Hayward, CA 94544
Phone: 261-6566
SIC: 2822, 3079

Vanitco, Incorporated
2317 American Ave., Hayward, CA 94545
Phone: 783-2154
SIC: 2842

Varn Products Company
1942 National Ave., Hayward, CA 94545
Phone: 783-8000
SIC: 2899, 2869

Washington Chemical Sales of California,
Incorporated
2498 American Ave., Hayward, CA 94545
Phone: 782-8727
SIC: 2841

LIVERMORE-AMADOR VALLEY

General Electric Company, Nuclear
Technology and Applications Operation
Vallecitos Nuclear Center
Vallecitos Rd., Pleasanton, CA 94566
Phone: 862-2211
SIC: 2819

Hexcel Corporation
11711 Dublin Blvd., Dublin, CA 94566
Phone: 828-4200
SIC: 2821, 3292, 3299, 3949, 3229

Industrial Asphalt, Division of Gulf
Oil Corporation
1645 Stanley Blvd., Pleasanton, CA 94566
Phone: 846-5125
SIC: 2951

Kaiser Aluminum & Chemical Corporation
Center for Technology
6177 Sunol Blvd., Pleasanton, CA 94566
Phone: 462-1122
SIC: 3357

Kaiser Sand & Gravel
5550 Niles Canyon Rd., Sunol, CA 94586
Phone: 862-2367
SIC: 2951

Reliable Processes
113 Greenville Rd., Livermore, CA 94550
Phone: 443-3140
SIC: 3479, 3079

Systron Donner Corporation,
Securities Devices Division
6767 Dublin Blvd., Dublin, CA 94566
Phone: 828-6260
SIC: 3674, 3662

NEWARK

A B & I Plastics
7091 Central Ave., Newark, CA 94560
Phone: 797-1934
SIC: 2821, 3079

Ardmor Chemical Company
8400 Enterprise Dr., Newark, CA 94560
P. O. Box 464, Newark, CA 94560
Phone: 797-5533
SIC: 2841

Bowman Industries, Incorporated
37555 Sycamore St., Newark, CA 94560
Phone: 793-7555
SIC: 2851, 3444, 3993

Camfield Chemical Company
37310 Filbert St., Newark, CA 94560
Phone: 793-4646
SIC: 2833, 2899

Cerro Metal Products, Division of Cerro
Corporation
6707 Mowry Ave., Newark, CA 94560
P. O. Box 444, Newark, CA 94560
Phone: 793-3400
SIC: 3351, 3463

Columbus Coated Fabrics, Division of
Borden Chemical, Borden, Incorporated
38083 Cherry St., Newark, CA 94560
Phone: 792-1400
SIC: 2824

Commercial Minerals Company
6899 Smith Ave., Newark, CA 94560
P. O. Box 363, Newark, CA 94560
Phone: 797-8080
SIC: 2911, 3295

Flintkote Company, The Pipe Products
Group
6756 Central Ave., Newark, CA 94560
Phone: 793-2200
SIC: 2999, 3644

FMC Industrial Chemical Division
8787 Enterprise Dr., Newark, CA 94560
P. O. Box 344, Newark, CA 94560
Phone: 793-1230
SIC: 2819, 2833

Hazardous Industrial Waste Survey
Industry List - Page 10

Guardian Packaging Corporation
6590 Central Ave., Newark, CA 94560
Phone: 797-3710
SIC: 2641, 2821

International Harvester Company
38600 Cedar Blvd., Newark, CA 94560
P. O. Box 505, Newark, CA 94560
Phone: 793-8282
SIC: 3531, 3711

Jones-Hamilton Company
8400 Enterprise Dr., Newark, CA 94560
Phone: 797-2471
SIC: 2819, 2879, 2899

Leslie Salt Company
7220 Central Ave., Newark, CA 94560
P. O. Box 364, Newark, CA 94560
Phone: 797-1820
SIC: 2819, 2899

Matheson Gas Products
6775 Central Ave., Newark, CA 94560
Phone: 793-2559
SIC: 2813, 3494

Morton Salt Company
7380 Central Ave., Newark, CA 94560
Phone: 797-2281
SIC: 2899

Paisley Products, Division of
Standard Brands
6925 Central Ave., Newark, CA 94560
Phone: 793-7300
SIC: 2046, 2891

Paper Manufacturers Company
37707 Cherry St., Newark, CA 94560
Phone: 793-5000
SIC: 2621, 2649

Peroxide & Specialties Company
8400 Enterprise Dr., Newark, CA 94560
P. O. Box 157, Newark, CA 94560
Phone: 797-6677
SIC: 2819, 2844

Peterbilt Motors
38801 Cherry St., Newark, CA 94560
Phone: 797-3555
SIC: 3531, 3711

Sierra Chemical Company
37650 Sycamore St., Newark, CA 94560
Phone No's: 797-7575 & 792-4141
SIC: 2875

Stein, Hall & Company, Incorporated
6800 Robertson Ave., Newark, CA 94560
Phone: 797-7200
SIC: 2891, 2821

OAKLAND

Acme Galvanizing Company, Incorporated
1655 - 17th, Oakland, CA 94607
Phone: 444-8790
SIC: 3479

Action Plating
10132 Edes Ave., Oakland, CA 94603
Phone: 568-3353
SIC: 3471

Advance Plating and Metal Polishing
920 - 54th Ave., Oakland, CA 94601
Phone: 533-2011
SIC: 3471

Aero Quality Plating Company, Incorporated
710 - 73rd Ave., Oakland, CA 94621
Phone: 568-0291
SIC: 3471

Allwork Manufacturing Company
336 Magnolia, Oakland, CA 94607
Phone: 451-6252
SIC: 3471, 3469, 3544, 3714

Almac Cryogenic Incorporated
1108 - 26th, Oakland, CA 94607
Phone: 832-1505
SIC: 2813, 3429

AMCO Chemical Corporation
3rd and Cypress, Oakland, CA 94604
P.O. Box 208
Phone: 893-1987
SIC: 2879, 2869, 2842

American Brass and Iron Foundry
7825 San Leandro Street, Oakland, CA 94621
Phone: 632-3467
SIC: 3079, 3321

Hazardous Industrial Waste Survey
Industry List - Page 11

American Electro Finishing Company
4933 San Leandro, Oakland, CA 94601
Phone: 533-6831
SIC: 3471

American Pen Company
8005 MacArthur Blvd., Oakland, CA 94605
Phone: 655-0637
SIC: 3479

American Polyfoam Company
1655 - 32nd, Oakland, CA 94608
Phone: 451-5444
SIC: 2821

American Tractor Equipment Corporation
9131 San Leandro Street, Oakland, CA 94603
Phone: 638-2466
SIC: 3531

Anderson Manufacturing Company
759 Blenheim Street, Oakland, CA 94603
Phone: 568-3816
SIC: 3471, 3599

ANFO Manufacturing Corporation
3129 Elmwood Avenue, Oakland, CA 94601
Phone: 532-2275
SIC: 2842, 2879, 2891

Angus Chemical Corporation
2857 Chapman, Oakland, CA 94601
Phone: 536-8710
SIC: 2842

Apothecare - Cal Incorporated
477 - 29th, Oakland, CA 94609
Phone: 465-3188
SIC: 2834

Associated Battery Assemblers
1777 Atlantic, Oakland, CA 94620
Phone: 893-8271
SIC: 3691

Associated Metals Company
2730 Peralta Ave., Oakland, CA 94607
Phone: 832-4343
SIC: 3341

Bay Area Engravers
1464 Webster, Oakland, CA 94612
Phone: 836-1404
SIC: 3479

Bay Area Oil Company
2341 Orinda Way, Oakland, CA 94612
Phone: 893-8161
SIC: 2911, 2992

Bay Rubber Company, Incorporated
404 Pendleton Way, Oakland, CA 94621
Phone: 635-9151
SIC: 3069

Belvedere Corporation, The
1000 - 40th Ave, Oakland, CA 94601
Phone: 261-2770
SIC: 2844

Blank, C. Foundry
1039 Cotton, Oakland, CA 94606
Phone: 532-3636
SIC: 3362, 3361

Blue Heron Corporation
8435 Baldwin, Oakland, CA 94621
Phone: 568-7207
SIC: 3531

Boysen Paint Company
1001 - 42nd, Oakland, CA 94608
Phone: 653-9211
SIC: 2851

Brake Specialty Company
1451 - 32nd, Oakland, CA 94608
Phone: 452-1431
SIC: 3292, 3714

Britex Metal Polishing
9901 San Leandro, Oakland, CA 94603
Phone: 635-2870
SIC: 3471

Burkart Division of Textron Ind., Inc.
2230 Livingston, Oakland, CA 94606
Phone: 536-2821
SIC: 2293

Buttes Gas and Oil Company
1970 Broadway, Oakland, CA 94604
Phone: 839-1600
SIC: 2911

Bytech Chemical Corporation
1905 Dennison, Oakland, CA 94606
Phone: 535-1700
SIC: 2842

Hazardous Industrial Waste Survey
Industry List - Page 12

Cal Ben Soap Company
9828 Pearmain, Oakland, CA 94603
Phone: 638-7091
SIC: 2841, 2842

California Electro-Plating Works
1132 E. 12th, Oakland, CA 94606
Phone: 834-9166
SIC: 3471

California Soda Company
355 Cypress, Oakland, CA 94607
Phone: 444-6217
SIC: 2812, 2841

California Steel Processing Co., Inc.
848 - 48th Ave., Oakland, CA 94601
Phone: 536-3800
SIC: 3479

Capitol Metals Inc., Northern Calif. Div.
1401 Middle Harbor Road, Oakland, CA 94607
Phone: 835-2442
SIC: 3479

Casper's Industry Incorporated
1047 - 77th Ave., Oakland, CA 94621
Phone: 569-4657
SIC: 3369, 3429, 3432, 3469, 3461,
3544, 3471

C & C Metal Processing Company, Inc.
455 - 9th Ave., Oakland, CA 94606
Phone: 834-1773
SIC: 3479, 3316

Chemical Compounding Company
2601 Wood Street, Oakland, CA 94607
Phone: 763-2763
SIC: 2842

Chemical Specialties
8291 Baldwin, Oakland, CA 94621
Phone: 569-8656
SIC: 2833

Chevron Asphalt Company
4525 San Leandro, Oakland, CA 94601
P.O. Box 999, Oakland, CA 94604
Phone: 533-0341
SIC: 2951

Chicago Rawhide Manufacturing
300 Market Ave., Oakland, CA 94607
Phone: 834-9890
SIC: 3111

Chromex
P.O. Box 8607, Oakland, CA 94662
967 Grace Ave.
Phone: 653-0792
SIC: 3471

Chrome Zinc Incorporated
2515 Willow, Oakland, CA 94607
Phone: 836-2751
SIC: 3471

Clorox Company
7901 Oakport, Oakland, CA 94601
Phone: 635-9666
SIC: 2819, 2842

Continental Plating Company Inc.
995 - 89th Ave., Oakland, CA 94621
Phone: 569-5772
SIC: 3471

Curtis, L.N. and Sons
4133 Broadway, Oakland, CA 94611
Phone: 655-5111
SIC: 3711

Custom Coatings Company
7605 Hawley, Oakland, CA 94621
Phone: 568-1718
SIC: 2951, 2952

Cut Off Company Incorporated
2324 Adeline, Oakland, CA 94607
Phone: 444-7911
SIC: 3479, 3449

Dahl Industrial Products Company
1133 - 24th, Oakland, CA 94607
Phone: 893-6375
SIC: 2992

Davi Miracle Foam
291-4th, Oakland, CA 94607
Phone: 835-5652
SIC: 2842

Davlin Paint Company
1401 E. 14th, Oakland, CA 94606
Phone: 534-4481
SIC: 2851

Hazardous Industrial Waste Survey
Industry List - Page 13

De Sanno Foundry and Machine Company
1933 Peralta Ave., Oakland, CA 94607
Phone: 832-0776
SIC: 3361, 3429, 3362, 3599, 3494

D H L Corporation
508 - 16th, Oakland, CA 94612
Phone: 465-3120
SIC: 3111

D L B Industries
1860 - 7th, Oakland, CA 94607
Phone: 893-2088
SIC: 3399, 3644, 3312

Doran Company
1899 7th, Oakland, CA 94607
Phone: 451-8219
SIC: 3362

Dougco
1073 - 34th, Oakland, CA 94608
Phone: 654-6256
SIC: 3471

Dunne, Frank W., Company
1007 - 41st, Oakland, CA 94608
Phone: 653-8811
SIC: 2851

East Bay Enameling Incorporated
1024 - 9th, Oakland, CA 94606
Phone: 836-3579
SIC: 3479

East Bay Hard Chrome Plating Company
1249 Powell, Oakland, CA 94608
Phone: 655-7421
SIC: 3471, 3599

East Bay Label Art
315 - 24th, Oakland, CA 94612
Phone: 465-1125
SIC: 2641, 2751

EBCO Manufacturing
321 E. 12th, Oakland, CA 94606
Phone: 451-7400
SIC: 2821

E-D Coat Incorporated
715 - 4th, Oakland, CA 94607
Phone: 832-8104
SIC: 3471, 3479

Elias Enameling & Signs
2354 Valley, Oakland, CA 94612
Phone: 452-4740
SIC: 3479, 3993

Esirg's Manufacturing Company Inc.
3137 Magnolia, Oakland, CA 94608
Phone: 654-5211
SIC: 2844

Esposito Plating & Polishing Corp.
1501 - 37th Ave., Oakland, CA 94601
Phone: 533-7144
SIC: 3471

Excel Transformer Company
2567 - 38th Ave., Oakland, CA 94601
Phone: 261-1467
SIC: 3677

E-Z-Est Products Company Incorporated
2528 Adeline, Oakland, CA 94607
Phone: 836-3980
SIC: 2842

Fabian Oil Refining Company
4200 Alameda Ave., Oakland, CA 94601
Phone: 532-5051
SIC: 2911, 2992

Ferro Enameling Company
1001 - 57th Ave., Oakland, CA 94621
Phone: 532-0266
SIC: 3479, 3469, 3444

Ferrous Metals Incorporated
1259 - 48th Ave., Oakland, CA 94601
Phone: 533-1156
SIC: 3399

Finer Filter Products
2800 E. 7th, Oakland, CA 94601
Phone: 433-5516
SIC: 2621

Flame Treating Company
910 - 81st Ave., Oakland, CA 94621
Phone: 562-6862
SIC: 3399, 3398

Flasher Company
351 Embarcadero, Oakland, CA 94606
Phone: 836-0861
SIC: 3531, 3647, 3999

Flecto Company Incorporated
1000 - 45th, Oakland, CA 94608
Phone: 655-2470
SIC: 2851

Hazardous Industrial Waste Survey
Industry List - Page 14

Fosters Plating and Metal Polishing Co.
1570 - 34th, Oakland, CA 94608
Phone 655-4760
SIC: 3471

Francis Plating of Oakland Incorporated
785 - 7th, Oakland, CA 94607
Phone: 444-5535
SIC: 3471

Fruehauf Trailer
850 - 92nd Ave., Oakland, CA 94603
Phone: 569-3331
SIC: 3531, 3713

Gallagher and Burk Incorporated
7100 Mountain Blvd., Oakland, CA 94605
Phone: 635-5200
SIC: 2951, 3273, 3281

Gardner Neon and Ignition Transformers Inc.
1010 - 38th Ave., Oakland, CA 94601
Phone: 533-3334
SIC: 3612

Garner Heat Treat Incorporated
10001 Denny, Oakland, CA 94603
Phone: 568-0587
SIC: 3399, 3398

General American Transportation Corporation
735 Terminal, Oakland, CA 94607
P.O. Box 98, Oakland, CA 94604
Phone: 834-5140
SIC: 2899

General Electric Company Transformer Plant
5441 E. 14th, Oakland, CA 94601
Phone 532-6010
SIC: 3612

General Electric Company - Wire & Cable Div.
1034 - 66th Ave., Oakland, CA 94621
Phone: 532-6010
SIC: 3357

General Grinding Incorporated
801 - 51st Ave., Oakland, CA 94601
Phone: 261-5557
SIC: 3291, 3599

General Pharmaceuticals
9 N. Hill Court, Oakland, CA 94618
Phone: 339-1234
SIC: 2834

Gibson Paint Factory
1199 E. 12th, Oakland, CA 94606
Phone: 834-9818
SIC: 2851

Globe Metals Company
1820 - 10th, Oakland, CA 94607
Phone: 444-2776
SIC: 3356, 3341

Grant Laboratories
6020 Adeline, Oakland, CA 94608
Phone: 653-2544
SIC: 2842, 2879, 3496

Grow Chemical Coatings Corporation
42nd and Linden, Oakland, CA 94608
Phone: 653-9217
SIC: 2851

Hard Chrome Engineering Company
750 - 107th Ave., Oakland, CA 94603
Phone: 568-0265
SIC: 3471

Haws Plating Works Incorporated
1185 Ocean Ave., Oakland, CA 94608
Phone: 655-4815
SIC: 3471

Ideal Label Company
4821 Tidewater, Oakland, CA 94601
Phone: 533-2877
SIC: 2641, 2751

Industrial Asphalt, Div of Gulf Oil Corp.
560 Independent Road, Oakland, CA 94621
Phone: 568-8014
SIC: 2951

Industrial Materials
3110 Adeline, Oakland, CA 94608
Phone: 658-7119
SIC: 3471

Inmont Corporation
1545 Willow, Oakland, CA 94607
Phone: 451-3330
SIC: 2893

Intermarco Incorporated
2515 Willow, Oakland, CA 94607
Phone: 836-2030
SIC: 3471

Hazardous Industrial Waste Survey
Industry List - Page 15

Jack's Custom Chrome Plating
1415 - 47th Ave., Oakland, CA 94601
Phone: 534-1101
SIC: 3471

Jerome and Horner Incorporated
3400 Chestnut, Oakland, CA 94608
Phone: 658-0471
SIC: 3479, 3444

Jerry's Metal Polishing
1023 - 77th Ave., Oakland, CA 94621
Phone: 568-2390
SIC: 3471

Johnson Plating Works
2526 Telegraph Avenue, Oakland, CA 94612
Phone: 444-7671
SIC: 3471, 3914

Johnson Propeller Company Incorporated
603 Lancaster, Oakland, CA 94601
Phone: 533-5082
SIC: 3361, 3362, 3519

Jones, Ed Company
537 - 16th, Oakland, CA 94612
Phone: 451-3037
SIC: 3479, 2753, 3544, 3953,
3999, 3993

Kaiser Sand and Gravel
401 Embarcadero, Oakland, CA 94606
Phone 465- 2245
SIC: 2951, 3272, 3273

Kirkhill Rubber Company
1624 Franklin Ave., Oakland, CA 94612
Phone: 893- 5377
SIC: 3069

K-L Plating and Manufacturing
10306 Pearmain, Oakland, CA 94603
Phone: 568-2494
SIC: 3471

Knopp Incorporated
1307 - 66th, Oakland, CA 94608
Phone: 653-1661
SIC: 3612, 3825

Kolsters Tool and Die Casting
8451 Baldwin, Oakland, CA 94621
Phone: 638-2549
SIC: 3361, 3362, 3451, 3544, 3369

Lahe Spring & Electric Car Corp.
2615 Magnolia, Oakland, CA 94607
Phone: 444-1350
SIC: 3292, 3493, 3537, 3692, 3949

Lane Metal Finishers
841 - 31 st, Oakland, CA 94608
Phone: 653-5053
SIC: 3471, 3479, 3914

Lasco Brake Products Corporation
2615 Magnolia, Oakland, CA 94607
Phone: 444-1350
SIC: 3292

Lindberg Heat Treating Company
1549 - 32nd, Oakland, CA 94608
Phone: 451-9875
SIC: 3399, 3398

Liquid Carbonic Corporation
901 Embarcadero, Oakland, CA 94606
Phone: 451-4100
SIC: 2813

L & M Plating Company
6410 E. 14th, Oakland, CA 94621
Phone: 569-4162
SIC: 3471

Long Manufacturing Company
280 Hegenberger Road, Oakland, CA 94621
Phone: 569- 9413
SIC: 2879

Lura - Glo Products Incorporated
1504 - 32nd, Oakland, CA 94608
Phone: 655- 4730
SIC: 2834, 2844

Marshall Steel
5427 Telegraph Ave., Oakland, CA 94609
Phone: 655-2800
SIC: 2843

Mayerle and Son Foundry
772 Moorpark, Oakland, CA 94603
Phone: 632-2373
SIC: 3361

Hazardous Industrial Waste Survey
Industry List - Page 16

Melrose Name Plate Company
919 Harrison, Oakland, CA 94607
Phone: 832-7067
SIC: 3479, 3993, 2753

Merritt Blacksmith
1244 High, Oakland, CA 94601
Phone: 533-3131
SIC: 3391, 3462

Metal Craft Industries
910 - 81st Ave., Oakland, CA 94621
Phone: 638-1424
SIC: 3399, 3544, 3565

Micro-Matic Deburring Company
3110 Adeline, Oakland, CA 94608
Phone: 652-5041
SIC: 3471

Modern Neon Company
2505 Poplar, Oakland, CA 94607
Phone: 834-7722
SIC: 3993

Modular Electric Power Distribution Systems
Inc.
8451 San Leandro, Oakland, CA 94621
Phone: 635-2214
SIC: 3612

Morin Steel Shape Cutting
3431 Louise, Oakland, CA 94608
Phone: 652-0740
SIC: 3399, 3568

Morwear Paint Company
2431 Peralta, Oakland, CA 94607
Phone: 444-6516
SIC: 2851

National Expansion Joint Company
1601 Embarcadero, Oakland, CA 94606
Phone: 536-0935
SIC: 2951, 2899, 2952, 3429

N.L. Industries Incorporated
4701 San Leandro, Oakland, CA 94601
Phone: 261-0180
SIC: 2816, 2851

Nord Laboratories
2633 E. 11th, Oakland, CA 94601
Phone: 533-8185
SIC: 2842

Nupave
321 E. 12th, Oakland, CA 94606
Phone: 471-7400
SIC: 2951

Oakland Metal Treating Company
450 Derby Ave, Oakland, CA 94601
Phone: 261-9675
SIC: 3399, 3398

Oakland Sand Blasting Company
Oakland International Airport
P.O. Box 2383, Oakland, CA 94614
Phone: 568-3373
SIC: 3471, 3559

Ormond, John H. Company, Incorporated
3640 Grand Ave, Oakland, CA 94610
Phone: 893-7700
SIC: 3612

Pacific Galvanizing
715 - 46th Ave, Oakland, CA 94601
Phone: 261-7331
SIC: 3479

Pacific Oxygen Company
2311 Magnolia, Oakland, CA 94607
Phone: 444-8081
SIC: 2813

Pacific Rustproofing
1732 Peralta Ave, Oakland, CA 94607
Phone: 444-7223
SIC: 3479, 3471

Pacific Tank and Pipe Company
4831 Tidewater Ave, Oakland, CA 94601
Phone: 533-2121
SIC: 2491

Pacific West Chemical Company
Embarcadero & Dennison, Oakland, CA 94606
Phone: 535-0899
SIC: 2842

Peerless Stucco Company Incorporated
5209 E. 8th, Oakland, CA 94601
Phone: 534-4851
SIC: 2851

Photon Transducers Incorporated
2900 Glascock St., Oakland, CA 94601
Phone: 261-0551
SIC: 3693

Hazardous Industrial Waste Survey
Industry List - Page 17

Pitchers Equipment Company Inc., The
3220 Telegraph Ave, Oakland, CA 94609
Phone: 654-5262
SIC: 2819

Plasti-Pave Manufacturing Company
321 E. 12th, Oakland, CA 94606
Phone: 451-7400
SIC: 2295

Polymeric Technology Incorporated
2329 Chestnut, Oakland, CA 94607
Phone: 836-2823
SIC: 3069

Power Plus Batteries Company
2921 Chapman, Oakland, CA 94601
Phone: 261-0877
SIC: 3692, 3691

Precision Packaging Incorporated
265 Hegenberger Rd, Oakland, CA 94614
Phone: 562-9338
SIC: 2821

Pressure Cast Products
4210 E. 12th, Oakland, CA 94601
Phone: 532-7310
SIC: 3361

Pride Metal Products Incorporated
834 - 49th Ave, Oakland, CA 94601
Phone: 534-6621
SIC: 3399, 3499

Process Poster Company
1809 Peralta Ave, Oakland, CA 94607
Phone: 465-3113
SIC: 2262, 3993

Protex Wax Company
1225 - 48th Ave, Oakland, CA 94601
Phone No's: 533-3801 533-3822
SIC: 2842, 2879, 2891

Quality Felt Company
737 Independent Road, Oakland, CA 94621
Phone: 632-6776
SIC: 2291

Rawleigh Company
306 Adeline, Oakland, CA 94607
Phone: 444-1870
SIC: 2834

Ray Drug Company Incorporated
3335 Grand Ave, Oakland, CA 94610
Phone: 451-4092
SIC: 2834, 2844

Red Star Yeast, Div Universal Foods Corp.
1384 - 5th, Oakland, CA 94607
Phone: 451-9215
SIC: 2869, 2099

Reliance Products Div, Reliance Upholstery
Supply Company Incorporated
1614 Campbell, Oakland, CA 94607
Phone: 893-7687
SIC: 2291, 2293

Rich, J.M., Paint & Varnish Company Inc.
615 High, Oakland, CA 94601
Phone: 533-4950
SIC: 2851

Royal Nu Foam Product Incorporated
1710 E. 12th, Oakland, CA 94606
Phone: 532-7630
SIC: 3693, 3079

Ryder Chemical Company
2601 Wood St, Oakland, CA
Phone: 893-5363
SIC: 2842

Safeway Stores Inc., Broodside Div.
Soap Plant
1100 - 77th Ave, Oakland, CA 94621
Phone: 632-7373
SIC: 2841

Scientific Platers Incorporated
963 - 87th Ave, Oakland, CA 94621
Phone: 569-9224
SIC: 3471

Screen Process Supplies Manufacturing Co.
1199 E. 12th, Oakland, CA 94606
Phone: 451-1048
SIC: 2893, 3555

Service Pattern and Foundry
2870 Chapman, Oakland, CA 94601
Phone: 261-5733
SIC: 3361, 3362, 3565

Shape Products
1100 - 6th Ave, Oakland, CA 94606
Phone: 893-0313
SIC: 2899, 3411

Hazardous Industrial Waste Survey
Industry List - Page 18

Shape Products
1100 - 6th Ave., Oakland, CA 94606
Phone: 893-0313
SIC: 2899, 3411

Sinclair and Valentine Co. Division
of Wheelabrator - Frye Incorporated
1104 - 57th Ave., Oakland, CA 94621
Phone: 533-6408
SIC: 2893

Smith Machine and Manufacturing Company
1129 - 32nd Ave., Oakland, CA 94608
Phone: 654-3811
SIC: 3069, 3599, 3544, 3565

Sonneborn - Contech
330 Brush, Oakland, CA 94607
Phone: 839-1710
SIC: 2891, 2899

Standard Brass Foundry
1901 Dennison, Oakland, CA 94606
Phone: 261-5321
SIC: 3362, 3361

Steccone Products Company
937 - 86th Ave., Oakland, CA 94621
Phone: 638-4870
SIC: 3069, 3429

Stork Town
6800 Bancroft Ave, Oakland, CA 94601
Phone: 569-7420
SIC: 3069

Superior Retinning Company
7011 Hamilton, Oakland, CA 94612
Phone: 638-1521
SIC: 3479, 3471

Taylor Roof Structure Inc.
1746 - 13th, Oakland, CA 94607
Phone: 893-3622
SIC: 2491, 2439

Thordix Anchors
2024 San Pablo Ave, Oakland, CA 94612
Phone: 451-2000
SIC: 3391, 3732

Union Rubber Company Inc.
1002 - 77th Ave, Oakland, CA 94621
Phone: 569-6323
SIC: 3011, 3031

U.S. Flexible Metallic Tubing Company
1193 Ocean Ave, Oakland, CA 94608
Phone: 658-9414
SIC: 3069, 3599

U.S. Helium
3985 Beach, Oakland, CA 94608
Phone: 655-3800
SIC: 2813, 3599

Universal Polishing and Plating Company
828 - 34th, Oakland, CA 94601
Phone: 532-7052
SIC: 3471

Ward Hard Chrome Incorporated
124 Hegenberger Loop, Oakland, CA 94621
Phone: 568-7332
SIC: 3471

West Chemical Products
1490 - 66th, Oakland, CA 94608
Phone: 658-0171
SIC: 2841, 2842

Western Adhesives
2433 Poplar, Oakland, CA 94607
Phone: 763-1500
SIC: 2821, 2891

Western Electro Mechanical Company Inc.
300 Broadway, Oakland, CA 94607
Phone: 452-1936
SIC: 3612

Western Kraft - Bag Division
7700 Edgewater Drive, Oakland, CA 94621
Phone: 569-7090
SIC: 2621

Williams, M and Sons Incorporated
1246 - 20th Ave, Oakland, CA 94606
Phone: 261-9343
SIC: 3479, 3079

Yates and Smart Paint
630 E. 10th, Oakland, CA 94606
Phone: 834-9500
SIC: 2851

Hazardous Industrial Waste Survey
Industry List - Page 19

SAN LEANDRO

Aldrich Chemical Company
2098 Pike Street
San Leandro, CA 94577
Phone: 352-1186
SIC: 2833

Alco Iron & Metal Company
2350 Davis Street
San Leandro, CA 94577
Phone: 562-1107
SIC: 3341

Acme Printing Ink Company, Bay Division
2785 Teagarden Street
San Leandro, CA 94577
Phone: 483-2020
SIC: 2893

A B C Pattern Works
459 Hester Street
San Leandro, CA 94577
Phone: 562-2620
SIC: 3361, 3544, 3565

Bearcat of California
2975 Teagarden Street
San Leandro, CA 94577
Phone: 351-8753
SIC: 3011

Beardsley's Black Oxide
2389 West Avenue 134th
San Leandro, CA 94578
Phone: 357-1934
SIC: 3471

Boyd, A B Company
2527 Grant Avenue
San Leandro, CA 94579
Phone: 278-8000
SIC: 3292

B & W Paint Mfg. Company
15319 East 14th Street
San Leandro, CA 94578
Phone: 351-2201
SIC: 2851

Califoam Corp. of America
2435 Polvorosa Street
San Leandro, CA 94577
Phone: 357-2600
SIC: 2829

Cal-Pac Chemical Co. Inc.
14500 East 14th Street
San Leandro, CA 94578
Phone: 351-4177
SIC: 2819

Casings-Western Inc.
2015 West 140th Avenue
San Leandro, CA 94577
Phone: 351-6700
SIC: 3369, 3444, 3442, 3449

Castco Cast Aluminum & Brass Corp.
667 Whitney Street
San Leandro, CA 94577
Phone: 562-5711
SIC: 3361, 3362

Caterpillar Tractor Company
800 Davis Street
San Leandro, CA 94577
Phone: 483-6000
SIC: 3531, 3519

Century Plating Company
1124-139th Avenue
San Leandro, CA 94578
Phone: 351-0454
SIC: 3471

C G R Medical Corporation
14680 Doolittle Dr.
San Leandro, CA 94577
Phone: 352-6400
SIC: 3693

Contractors Chemical & Supply Co.
1620 Doolittle Dr.
San Leandro, CA 94577
Phone: 352-1353
SIC: 2891, 2899

Crown Zellerbach Corporation
Flexible Packaging Division
2101 Williams Street
San Leandro, CA 94577
Phone: 352-1211
SIC: 2621, 2641, 2643

Custom Chemicides Inc.
476 Hester Street
San Leandro, CA 94577
Phone: 638-4668
SIC: 2879

Hazardous Industrial Waste Survey
Industry List - Page 20

Daw Printing Ink Company
1929 Wilkinson Ln.
San Leandro, CA 94577
Phone: 483-6110
SIC: 2893, 2899

Diagraph-Bradley Distributing Co., Inc.
990 Carden Street
San Leandro, CA 94577
Phone: 562-7522
SIC: 2641

Durkee-Atwood Company
14269 Catalina Street
San Leandro, CA 94577
Phone: 352-4530
SIC: 3041, 3069

EBCO Manufacturing
3055 Alvarado Street
San Leandro, CA
Phone: 352-0566
SIC: 2821

Edwards Heat Treating Service
642 McCormick Street
San Leandro, CA 94549
Phone: 638-4140
SIC: 3398

Electro Engineering Works
401 Preda Street
San Leandro, CA 94577
Phone: 569-3326
SIC: 3612, 3677

Fry, Lloyd A., Roofing Company
2001 Marin Avenue
San Leandro, CA 94577
Phone: 357-3910
SIC: 2952

General Foundaries Service Corp.
459 Hester Street
San Leandro, CA 94577
Phone: 562-2620
SIC: 3361, 3559

Grace, WR, Co., Dewey & Almy
Chemical Division
2140 Davis Street
San Leandro, CA 94577
Phone: 568-3427
SIC: 2899

International Paper Co., Ink Division
1930 Fairway Drive
San Leandro, CA 94577
Phone: 352-3420
SIC: 2893, 2899

Joy Industrial Solvents Corporation
864 Estabrook Street, P. O. Box 752
San Leandro, CA 94577
Phone: 357-7588
SIC: 2869

Kaiser Aluminum & Chemical Corporation
1937 Davis Street
San Leandro, CA 94577
Phone: 569-2012
SIC: 3352, 3357, 2819

Kaiser Gypsum Co., Inc.
1988 Marina Blvd.
San Leandro, CA 94577
Phone: 483-7580
SIC: 2631, 2649, 3275

KUHL Manufacturing Co., Inc.
2424 Davis Street
San Leandro, CA 94577
Phone: 569-6558
SIC: 3479, 2542, 3429, 3443, 3444
3469, 3499

Lawter Chemicals Inc.
595 Montague Avenue
San Leandro, CA 94577
Phone: 357-7255
SIC: 2851, 2893

Martin, J. Marie Company
1991 Burroughs Avenue
San Leandro, CA 94577
Phone: 453-8710
SIC: 3292

Miller Materials Company
797 Marina Blvd.
San Leandro, CA 94577
Phone: 357-3300
SIC: 2816

Nelson, W.W., Contractor Radiation
Shielding
14114 Washington Avenue
San Leandro, CA 94578
Phone: 357-5847
SIC: 3479, 3693, 3842

Hazardous Industrial Waste Survey
Industry List - Page 21

New England Lead Burning Company, Inc.
1840 Williams Street
San Leandro, CA 94577
Phone: 357-9940
SIC: 3479, 3443, 3842

Norco Paint
2310 Davis Street
San Leandro, CA 94577
Phone: 562-1696
SIC: 2842, 2851

North American Equipment Company
2000 Merced Street
San Leandro, CA 94577
Phone: 352-0123
SIC: 3531

Nox-Crete Chemicals
1620 Doolittle Drive
San Leandro, CA 94577
Phone: 352-1353
SIC: 2999, 2899

Nupave
3055 Alvarado Street
San Leandro, CA 94577
Phone: 352-0566
SIC: 2951

Oliver Wire & Plating Co., Inc.
555 Montague Avenue
San Leandro, CA 94577
Phone: 351-2554
SIC: 3471, 3496

Pacific Aerosol Inc.
2424 Merced Street
San Leandro, CA 94577
Phone: 351-4860
SIC: 2891, 3411

Packaging Industries Inc.
2450 Alvarado Street
San Leandro, CA 94577
Phone: 352-2262
SIC: 2821

Pakon Industries
14531 Griffith Street
San Leandro, CA 94577
Phone: 357-8140
SIC: 2641, 3079

Pargas Inc.
10620 Bigge Avenue
San Leandro, CA 94577
Phone: 562-4741
SIC: 2813

Pedershaab Inc.
458 Whitney Street
San Leandro, CA 94577
Phone: 635-7496
SIC: 3531

Physics International Co.
2700 Merced Street
San Leandro, CA 94577
Phone: 357-4610
SIC: 3674, 3573

Plasti-Pave Mfg. Company
3055 Alvarado Street
San Leandro, CA 94577
Phone: 352-0566
SIC: 2295

Precision Founders
414 Hester Street
San Leandro, CA 94577
Phone: 562-4971
SIC: 3361, 3324, 3362

Precision Metal Fabricators
540 Lewelling Blvd.
San Leandro, CA 94579
Phone: 483-2804
SIC: 3674, 3443, 3728, 3769

Pro-Co Inc.
950 Carden Street
San Leandro, CA 94577
Phone: 638-0444
SIC: 2891

Production Pattern & Foundry Co.
700 Marina Blvd.
San Leandro, CA 94577
Phone: 357-2064
SIC: 3362, 3361, 3369, 3565

R. G. Development Industries
2450 Alvarado Street
San Leandro, CA 94577
Phone: 357-7778
SIC: 3531

Hazardous Industrial Waste Survey
Industry List - Page 22

Ridgeway Packaging Company
733 Marina Blvd.
P.O. Box 665
San Leandro, CA 94577
Phone: 357-9872
SIC: 2641, 2651, 2752

Rockmount Research & Alloys
2076 Edison Avenue
San Leandro, CA 94577
Phone: 636-0270
SIC: 2899

Rorer, William H. Inc.
1550 Factor Avenue
San Leandro, CA 94577
Phone: 357-9741
SIC: 2834

Rose, W. C., Company
2399 Davis Street
San Leandro, CA 94577
Phone: 569-2255
SIC: 3471

Royal Super Ice Company
577 Estabrook Street
San Leandro, CA 94577
Phone: 483-1778
SIC: 2813, 2899, 3842

Sealite Inc.
375 Preda Street
San Leandro, CA 94577
Phone: 568-1017
SIC: 2294, 3293

Speed Master Engineering Company
900 Doolittle Drive
San Leandro, CA 94577
Phone: 568-5129
SIC: 3361, 3362, 3369

Standard T. Chemical Co., Inc.
3016 Alvarado Street
San Leandro, CA 94577
Phone: 357-9502
SIC: 2842, 2851

Supreme Metal Polishing
14442 Washington Blvd.
San Leandro, CA 94578
Phone: 351-1812
SIC: 3471

Talcott Co., Inc.
2368 Alvarado Street
San Leandro, CA 94577
Phone: 357-9494
SIC: 2261, 2262, 2899

Trumbull Asphalt Company
2005 Marina Blvd.
San Leandro, CA 94577
Phone: 357-3715
SIC: 2951, 2952

Uher & Whipple Mechanical Lab. Inc.
1700 Timothy Drive
San Leandro, CA 94577
Phone: 352-1680
SIC: 3674, 3544

U S Printing Ink
14465 Griffith Street
San Leandro, CA 94577
Phone: 357-5200
SIC: 2893

Vi-Jon Laboratories, Inc.
2055 Adams Avenue
San Leandro, CA 94577
Phone: 562-0996
SIC: 2834, 2844

WEBSCO Automotive Products
2512 Davis Street
San Leandro, CA 94577
Phone: 638-8973
SIC: 3292, 3714

Western Sealant of Northern California
1666 Timothy Drive
San Leandro, CA 94577
Phone: 352-0242
SIC: 3479

Worldwide Filter Corporation
1685 Abram Ct.
San Leandro, CA 94577
Phone: 483-5122
SIC: 2992

SAN LORENZO

C & R Rubber Products Inc.
2548 Grant Avenue
San Lorenzo, CA 94580
Phone: 276-0100
SIC: 3069, 2822

Hazardous Industrial Waste Survey
Industry List - Page 23

Engraving Specialties
855 Elgin Street
San Lorenzo, CA 94580
Phone: 351-0122
SIC: 3479, 2753

UNION CITY

Alco Metal Polishing
33443 Western Avenue
Union City, CA
Phone: 489-0955
SIC: 3471

Alvarado Dye House Inc.
30542 Union City Blvd.
Union City, CA 94587
Phone: 471-7888
SIC: 2231

Campbell Chain Company
30070 Union City Blvd.
Union City, CA 94587
Phone: 471-2420
SIC: 3391, 3462

Celotex Corp, The
32550 Central Avenue
Union City, CA 94587
Phone: 471-5921
SIC 2952

Chase Company, The
4000 Tara Court
Union City, CA 94587
Phone: 471-1687
SIC: 3479

Durofoam Products Co.
30518 Union City Blvd.
Union City, CA 94587
Phone: 471-7744 or 471-1566
SIC: 2821, 3079

Epoxy Coatings Company
33500 Western Avenue
Union City, CA 94587
Phone: 471-7800
SIC: 2891

Intercoastal Corporation
1 Tara Court
Union City, CA 94587
Phone: 471-2882
SIC: 2851, 2891

Kaiser Aluminum and Chemical Corp.
Can Plant No. 1
33280 Central Avenue
Union City, CA 94587
Phone: 471-2133
SIC: 3361, 3411

Liquid Air Inc., American
Cryogenics Division
700 Decoto Road
Union City, CA 94587
Phone: 471-6282
SIC: 2813

Owens Illinois Inc.
Forest Products Division
1570 Atlantic Street
Union City, CA 94587
Phone: 532-7373
SIC: 2631, 2653

Pacific States Steel Corporation
35124 Alvarado-Niles Road
Union City, CA 94587
Phone: 793-2111
SIC: 3312, 3462

Perf Products, A Division of Plex
Chemical Corporation
1205 Atlantic Street
Union City, 94587
SIC: 2841, 2842

St. Regis Paper Company
33063 Western Avenue
Union City, CA 94587
Phone: 471-4800
SIC: 2631, 2643

Waterworks Supply & Mfg. Company
33379 Railroad Avenue
Union City, CA 94587
Phone: 471-3200
SIC: 3479, 3494, 3546

GLOSSARY

CHEMICAL ELEMENTS AND COMPOUNDS

<u>Name</u>	<u>Symbol</u>
Aluminum	Al
Aluminum chloride	AlCl ₃
Aluminum oxide	AlO ₃
Ammonium nitrate	NH ₄ NO ₃
Arsenic	As
Arsenic sulfide	AsS
Barium	Ba
Barium sulfate	BaSO ₄
Boron	B
Bromine	Br
Cadmium	Cd
Calcium	Ca
Calcium oxide	CaO
Calcium sulfate	CaSO ₄
Chlorine	Cl
Chromium	Cr
Copper	Cu
Copper sulfate	CuSO ₄
Ferric chloride	FeCl ₃
Ferric oxide	Fe ₂ O ₃
Ferrous sulfate	FeSO ₄
Fluorine	F
Hydrogen	H
Hydrogen chloride	HCl
Iron	Fe
Lead	Pb
Linear Alkyl Sulfonates	LAS
Lithium	Li
Lithium hydroxide	LiOH
Magnesium	Mg
Magnesium oxide	MgO
Magnesium sulfate	MgSO ₄
Manganese	Mn
Mercury	Hg
Molybdenum	Mo
Nickel	Ni
Nickel chloride	NiCl
Nickel sulfate	NiSO ₄
Nitrogen	N
Nitric acid	HNO ₃
Oxygen	O
Phosphorus	P
Polyvinilidene chloride	PVCD
Potassium	K
Potassium hydroxide	KOH
Potassium permanganate	KMnO ₄
Silicon	Si
Silicon dioxide	SiO ₂
Sodium	Na
Sodium hydroxide	NaOH
Sulfur	S
Sulfuric acid	H ₂ SO ₄
Zinc	Zn
Zinc hydroxide	ZnOH

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